Railway Age

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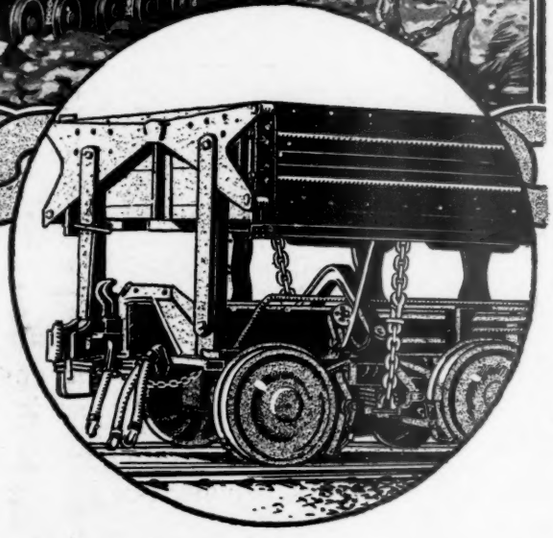

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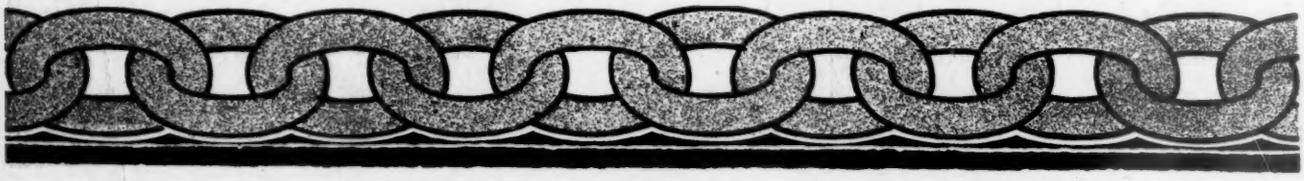

EDITORIAL

Railway Age

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The Executive Turn-Over

The labor turn-over is a well-defined problem. Many industries are spending money to investigate and to correct causes that lead to unstable labor conditions. Why not investigate the executive turn-over? Why not determine why foremen and superintendents are forever changing, why these men are attracted elsewhere or why it is thought necessary to supplant them with men from the outside? The demoralizing effect of the labor turn-over is not a circumstance compared to that of the executive turn-over. Consider the effect on every subordinate employee whenever a new superintendent of motive power or even a general manager is recruited from outside the ranks. Does it tend to inspire loyalty or enhance such incentive as may be found in the hope of advancement? The management may feel that the property is in a rut, that it needs an outsider to wake them up. Fortunately, the "boomer executive" who bumps from road to road in this waking-up process is almost a thing of the past. The railroads have discovered that it is safer, though it may be slower, to develop executive timber from within.

Steam vs. Electric Locomotives

Elsewhere in this issue is a notice of a joint meeting of the New York Section of the American Institute of Electrical Engineers, the Metropolitan Section of the American Society of Mechanical Engineers and the Railroad Section of the A. S. M. E., to be held on October 22. The relative advantages of modern steam and electric locomotives will be outlined by four able speakers and discussed by others who are well acquainted with steam and electric equipment. This program will undoubtedly attract much attention. The subject of electrification has grown in general interest until it has been made a part of the proceedings of societies not originally interested in anything pertaining to railroads. A large amount of good material has been prepared on the subject, but it has lacked in cohesion and specific facts and has been tempered by manufacturers lauding their favorite type of equipment. The relative merits of alternating and direct current equipment have long been a bone of contention. This time the electrical manufacturers will probably be obliged to get together and the meeting will bear the official stamp of two of our best engineering societies. The Railroad Section of the A. S. M. E. is to be commended for arranging a meeting which should be one step toward the crystallizing of a mass of unassimilated claims and data.

Seventh Fuel Commandment: Distribution

One of the most practical ways in which any railroad can apply itself to the fuel problem is through the more effective distribution of fuel. The variety of service, the various types of power and the numerous grades of fuel afford an opportunity for good judgment in the distribution of fuel that is not always exercised. Wherever coal can be thoroughly inspected some effort should be made to grade it with respect to its relative steam producing qualities and there is no reason why it cannot be so conspicuously carded that no yardmaster can be excused for placing on the chute a string of cars containing coal classed as "poor" when he could have alternated these with cars containing coal described as "good." Wherever mechanical facilities are such as to affect the character of coal issued to individual locomotives it is well to bear in mind that passenger locomotives are often better able to cope with inferior coal than locomotives assigned to difficult freight runs. The proper distribution of fuel cannot be prescribed by any formula. As with each operation outlined in the preceding commandments relating to fuel conservation, good judgment, which implies a broad consideration of all factors and avoidance of extremes, must be relied upon.

Post-Graduate Courses for Trainmen

A small percentage of our conductors and enginemen can be classed A-1. As to the large remaining percentage their general mental capacity needs to be elevated, and their mental habits directed and regulated. This is one of the salient passages in a letter on train rules which is printed in another column. The title of this note is suggested in the letter. Is it too fanciful? Is the education of trainmen unnecessary? Is it impracticable? Have reports of collisions become so common that their force is lost? Recall the lessons of Bertha, Harlan, Huntsville, Riverside, South Chicago, Trussville and other equally conspicuous illustrations of failure to conform to the first principles of safety. Is it possible to define any tangible benefit from the publication of these government reports? If so, what is it? The Interstate Commerce Commission says that the introduction of the block system is the remedy for this collision scandal. The railroads, by their action, not perhaps by specific avowal, say that no such radical change is needed. If the railroads' position is consistent, then the same can be said of the position taken by our correspondent. A great improvement in efficiency is needed. His suggestion that the proper education of trainmen calls for a marked accession of courage on the part of trainmasters will be endorsed in many places. Trainmasters, like some other classes, often seem to possess a lot of knowledge which is in need of propelling power.

"Speed Wars" Are Undesirable

Announcements of changes and improvements in passenger train schedules have recently been made by several of the larger western lines. In several cases schedules have been re-arranged so as to shorten the time of "de luxe" trains between large terminals. Coincident with these announcements, there appeared in Chicago newspapers, stories of the institution of a new "speed war." A perusal of the schedule changes which have so far been made, fails to substantiate the newspaper statement, although it does indicate that competition is again becoming keen between the transcontinental carriers. It has not been the policy of the *Railway Age* in the past to decry keen competition, nevertheless, it should be pointed out at this time that it should be kept within reasonable bounds.

The traveling public has a right to, and is demanding, efficient, adequate passenger service, but on the other hand, it has been so thoroughly informed regarding many of the wasteful practices resulting from intensive competition before the period of government control, that it is not improbable that any revival of these conditions will lead to extensive criticism. The safest policy and the only policy which should be followed in this period of reconstruction and trial, is to make those schedule and time changes which are necessary to serve the public adequately and satisfactorily. Certainly every effort should be made to avoid the heralding of "speed wars" and extravagant competition.

Car Building Picks Up

The latest report of the United States Bureau of Labor Statistics on employment in selected industries shows a promising advance in activity on the part of the car building and car repair establishments in August, 1920, as compared both with August, 1919 and July, 1920. The report covers 13 manufacturing industries and coal mining, and for both the comparisons made the car building industry shows the largest increases in activity of any of the industries mentioned. The figures showing this pronounced increase are as follows:

COMPARISON OF EMPLOYMENT, CAR BUILDING AND REPAIRING ESTABLISHMENTS

August, 1919, and August, 1920—Figures for 41 identical establishments.

	August, 1919	August, 1920	Per cent of increase
Number on payroll	36,900	45,162	22.4
Amount of payroll	$1,883,439	$3,292,706	74.8

July and August, 1920—Figures for 41 identical establishments

	July, 1920	August, 1920	
Number on payroll	44,101	45,639	3.5
Amount of payroll	$2,741,614	$3,325,250	21.3

It will be noted that in the comparison between August, 1919, and August, 1920, covering 40 establishments, an increase is shown of 22.4 per cent in the number on the payrolls and of 74.8 per cent in the amount of the payroll. The comparison between August, 1920 and July, 1920, covering 41 establishments, shows similar increases in the number on the payrolls of 3.5 per cent and in amount of payroll, 21.3 per cent. It is true that increases in payrolls in this day and year may not always mean increased activity; we shall have to wait until we see the August figures of production to be absolutely sure on that point. Nevertheless, we feel optimistic enough to presume that increased activity is indicated and to reproduce the figures quoted as encouraging information.

T. & T. Division Meeting

Modern railroad work could not be carried on successfully without a means of rapid communication between various places on a system. The efficiency and despatch with which such work is handled depend largely on the superintendent of telegraph and his organization. The telegraph department is one of the oldest departments of the railroad and few realize the changes which have occurred and the developments made in the apparatus employed in recent years, many still thinking of the telegraph as a simple circuit consisting of a sounder, key and battery. The development of wireless telegraphy and telephony and a study of their application to railway service, the use of the multiplex and printer systems and the possibilities of wired-wireless indicate the growth of the art and the necessity of attracting properly and technically trained men into this field of railway service. That the Telegraph and Telephone division recognizes the importance and necessity of considering and applying improvements to the railroad telegraph and telephone service for its betterment was well demonstrated by the excellent reports presented at the annual meeting of the division at Winnipeg, Manitoba, on September 22, 23, and 24. Particular attention was called to the necessity of educating and holding desirable men in service, this being one of the greatest problems confronting this in common with other departments at the present time. A long step towards the solution of this problem will have been made when railroad officers become able to interest their men in the department's work. This can be accomplished through proper educational methods. One means which will produce results is the formation of local regional committees of the division to reach and interest the man in the field who has little or no opportunity to attend the regular sessions of the division.

Loan Fund Delays

A careful analysis of the orders for cars and locomotives reported in the Equipment and Supplies column in the issues of the *Railway Age* for the first nine months of 1920 shows that in that period orders were reported as placed by the Class I railroads of the United States for only 1,403 locomotives, 40,254 freight cars and 814 passenger cars. The interesting details of the analysis itself will be covered at greater length in next week's issue. There are many reasons for the failure of the railroads to place orders for cars and locomotives, but there is no doubt that the slowness with which certifications of loans from the revolving fund have been made is one of them. This loan fund of $300,000,000 was meant to assist the railroads in rehabilitating their physical property. Among other things it was intended to enable the roads to finance their orders for new equipment and to assist in getting the orders placed and under way in the shortest possible time. Alfred P. Thom, general counsel of the Association of Railway Executives, referred to this at the hearings on the loan fund applications in Washington on September 23 when he asked whether a wholesome situation was represented by the fact that so little of the money has been put to work in the seven months since the law was passed. It is not the purpose of this editorial to criticise the finance division of the Interstate Commerce Commission which undoubtedly has been hurrying the certifications as much as is possible with the complicated nature of the subject. Nor is it meant in criticism of the officers of the Treasury who have held up a number of the certifications. It is meant rather to emphasize the importance of putting this money "to work" at an early date and to express the regret that working out the details of making it available has had to take so much valuable time.

Keep the Cars Out of the Yards

It is trite to say that the problem of securing the maximum mileage from cars resolves itself into that of keeping them moving. Yet if this is done the goal of maximum car mileage will be attained. One of the principal points of delay is in the yard; therefore, if the cars can be kept out of the yards their movement will be expedited. Switching is, of course, necessary to consolidate cars into trains for movement. On some roads it is the practice to make up trains at each terminal for the next terminal only, leaving it to the forces at that point to do the same work again. On other roads, it is the practice to group cars into solid trains for movement to remote points, thereby reducing the switching at intermediate terminals to the minimum. This latter practice makes it necessary to hold cars somewhat longer in the first terminals

and also adds to the cost of switching at that point. However, this added delay and expense are usually more than offset by the savings affected in passing through intermediate terminals. No new idea is involved in this suggestion for it has been in operation on certain roads for years. However, a study of the practices prevailing over the country will show that this method is not followed to nearly the extent that present conditions justify. A plan such as this must necessarily be spread over a system or a district. It is therefore a problem for the general officers. No such officer can say that he has done his utmost to speed up the movement of cars until he has analyzed the operation of those terminals under his supervision critically to ascertain whether he has not been doing more switching and thereby delaying cars more seriously than is really necessary.

State Commissions Preventing Adequate Advances in Rates

A VERY IMPORTANT problem which must be solved soon has arisen as a sequel to the granting of increased interstate freight and passenger rates by the Interstate Commerce Commission. The nation's elaborate network of rates and differentials is in danger of being thrown into chaos. Where two months ago discrimination in transportation charges between cities, states and sections was negligible, it is now grossly apparent. This condition has arisen because some of the state railroad commissions are refusing the lead of the Interstate Commerce Commission in readjusting rates.

When the Interstate Commerce Commission began consideration of the carriers' applications for increased rates, the National Association of Railway and Utilities Commissioners, composed of the members of the state regulatory commissions, appointed three representatives to sit with the Commission and subsequently to formulate recommendations to the various state organizations. On July 31 the Commission announced its decision and the three authorized representatives of the state commissioners' association issued a formal statement recommending the granting of rates on state freight and passenger traffic corresponding with those fixed by the Interstate Commerce Commission on interstate traffic.

What has been the result? Of 36 state commissions by which action has so far been reported, only 19 commissions have granted increases in state freight rates corresponding with the increases granted by the Interstate Commerce Commission in the same territory. Seven state commissions have granted corresponding state freight rate increases but have denied or modified the increases on many commodities. Six commissions have allowed the carriers to file tariffs and place the new rates in effect subject to review upon complaint. One commission has denied the carriers' applications upon technical grounds. Two commissions, both in territory in which an interstate freight increase of 35 per cent has been made, have granted state increases of 33½ per cent, and another commission in the same territory has granted a state increase of but 25 per cent.

In regard to the increases in passenger fares, 16 state commissions have allowed advances in state rates corresponding to the interstate advances, 13 have denied applications for increases, 6 have allowed tariffs to be filed and the rates placed in effect subject to review, and one has denied the application for advances on technical grounds.

Similar differences have resulted from the consideration by state commissions of the increases allowed by the Interstate Commerce Commission in excess baggage rates and milk and cream rates, and its allowance of surcharges on sleeping and parlor car rates.

The result of this chaotic condition has been the establishment of flagrant rate discriminations throughout the country. For instance, a shipper in Council Bluffs, Iowa, has markets within the state of Nebraska. His freight rate to those markets, being interstate, has been increased 35 per cent by the Interstate Commerce Commission. The shipper of a similar commodity located at Omaha, Neb., across the Missouri river from Council Bluffs, can ship to the same markets at an increase of only 25 per cent because the Nebraska commission has granted an increase in rates of only that amount. The same condition prevails at many points throughout the West.

In regard to passenger traffic, the passenger fare from Chicago to St. Louis, Mo., is 3.6 cents per mile, in accordance with the ruling of the Interstate Commerce Commission. The fare from Chicago to East St. Louis, Ill., just across the Mississippi river, is but 3 cents per mile, in accordance with the ruling of the Illinois commission. The surcharge on Pullman and parlor car fares cannot be collected on the latter trip, whereas it can on the former.

Such conditions cannot continue to exist without nullifying the attempt of the Interstate Commerce Commission to grant the railroads adequate revenues with which to restore their properties and render satisfactory service. The percentage increases allowed by the Commission were based on total figures for all roads in each group. These include, of course, figures for state traffic. If part of the traffic is to be carried at different and lower rates, it is evident that the increase in earnings that will occur will fall far short of the estimates of the Commission and will fail to accomplish its object of putting the railroads on their feet financially.

The rehabilitation and expansion of the railroads are not primarily of local or state interest. The problem is national and one which uniform national treatment alone will solve. If the state commissions are to be allowed to prevent the railways from earning adequate net returns they will defeat all the efforts which have been made by Congress and which are now being made by the Interstate Commerce Commission to deal with and solve the railroad problem as a national problem.

New Books

Tin, Sheet Iron and Copper Plate Worker. By Leroy J. Blinn. *334 pages, 5 in. by 7 in., illustrated, bound in cloth. Published by Henry Carey Bird & Co., 2 West Forty-fifth street, New York.*

This book can best be classed as a reference volume for engineers, foremen and mechanics who have to do with sheet metal working of any description. It could also be made use of as a text book on this subject and will afford interesting reading to anyone versed in the manipulation of sheet metals, but it is primarily a handbook designed for the guidance of workers in sheet metal. As such it is eminently practical and deals most thoroughly with every phase of this work. Particular attention is given to the rules for laying out work of all descriptions, the composition of metallic alloys and solders, recipes for varnishes, lacquers, cements and so on. All the manipulations encountered in the work shop are described quite definitely. As this book is a revised edition of an earlier publication it may be added for the benefit of those who are familiar with the previous edition that the new edition contains all the fundamental subject matter appearing in the original publication, augmented by data on the modern system of triangulation as related particularly to skylight work. Moreover, that portion of the earlier edition treating on metallic alloys and solders has been entirely rewritten so as to incorporate the best modern practice. The subjects are systematically grouped and a complete alphabetical index adds to the value of the book as a reference volume.

Letters to the Editor

What is the Matter With Our Train Rules?

PHILADELPHIA, Pa.

TO THE EDITOR:

Excessive worship of train rules is one of our sins that does not seem to get cured very fast; worship of words instead of deeds, or, of printed words as against incisive oral lectures by an officer who compels responses. When are we going to see a change? The work which has been expended during the past 25 years in committee rooms on revisions of the Standard Code might, if it had been employed in real education of live men, have elevated our practice quite materially.

I have been re-reading the government reports on the butting collisions at Riverside, Vt., on March 14, reported in the *Railway Age* of June 4, page 1572, and at Trussville, Ala., on February 15, reported in the issue of June 11, page 1662. At Riverside, five or more plainly-worded and well-understood rules were violated or ignored. At Trussville, one standard and one time-table rule were disobeyed. At both places important fundamental principles, which we call unwritten rules, were violated.

At Riverside there was disobedience of Rules 105 and 107; the former making both conductor and engineman responsible for the safety of the train, and the other requiring everybody, in case of doubt, to take the safe course. These might be called the most general and the least specific of any of the rules in the book; but what are they there for? As to 107, the conductor explicitly admitted that he was in doubt as to the safety of proceeding; and he was held grossly negligent for not having stopped at Chester to have his doubts cleared up. If this rule is to have any value for a conductor it can have it only as it is imbedded in his consciousness so that it will make itself prominent in his mind when an occasion comes up like this. The same is true of 105. Now, in behalf of the trainmaster it may be said that to thus fix rules of this kind in men's minds is out of the question; but that is the issue, plainly. If the trainmaster cannot do better it must be admitted either that the rules are useless, or the trainmaster is not up to his tasks; either give up the rule or find better men or better methods for enforcing it.

Rule 221, requiring the issuance and delivery of clearance cards, was ignored by the operator; and the engineman was held equally blameworthy. This rule is more specific; and the lesson that there should be persistent checking, all the time, to stop such negligence, is too obvious to need comment. Rule 507, requiring brakes to be tested at Summit, was ignored by both conductor and engineman.

The rule requiring fireman and brakeman to read train orders is of the same nature, but harder to enforce because it often requires a man to be more punctilious than his boss; to be careful in matters which an irresponsible mind can easily assume to be unimportant.

A special bulletin limiting speeds of all freight trains evidently had been ignored habitually.

At Trussville there was similar disregard of a rule imposing a maximum rate of speed; and the despatcher was censured for using Form 19 in circumstances where, under time-table Rule B-9, only Form 31 was permissible.

But these acts or omissions which relate to written rules are no more important—it is easy to regard them as less important—than the glaring instances of contempt for unwritten rules, which we see in these cases. My question, "What is the matter with our train rules?" may be answered, "Nothing; only enforce them."

These derelictions are of a kind that are a disgrace to an American railroad under any system. There are important rules, written and unwritten, to be observed whether we use the block system or no system; and the really significant lesson of these and other collisions is that the general mental capacity of trainmen needs to be elevated, and their mental habits directed and regulated. The enforcement of written rules is about the only means we have of enforcing those which are unwritten; and the education of men under those old methods is not by any means wasted if the old are superseded by new methods.

If a conductor or a brakeman neglects an unwritten rule, he needs a lecture, perhaps a private lecture filling an hour; or possibly several lectures; but lectures are liable to develop into vague talks which lose strength as they increase in length; and, unless the trainmaster is a genius, he is likely to find that he cannot give useful lectures except as he makes them concrete, by basing them on a written rule, and illustrating them by cases of actual recent disobedience of that rule.

At Trussville the conductor and the rear brakeman were held at fault in not discerning the situation *nearly a mile ahead;* they ought to have noticed the light on a signal at that distance by looking out of the side of their caboose, and they ought to have quickly sensed the fact that the opposing train was not on the side track, at the north end, when they came to the south end; sensing the fact with alert minds they would have realized that they were running past their meeting point and would have stopped their train at once. The engineman, running at night, had gone all day without sleep; disregarding the unwritten rule that he, himself, not his employer, was responsible for keeping his mind and body fit for his duties. No one has done much to educate enginemen in this direction; but everybody knows that educating them in written rules tends to cultivate in them a disposition to heed the unwritten—unwritten rules which they well know. In the Vermont case the operator neglected a most vital unwritten rule, namely: that his handwriting must be legible. If we credit his statement that his train-orders had been accepted by enginemen for years without protest, the conclusion must be that his superiors had neglected the unwritten rule to require operators' work (including penmanship) to be kept up to a reasonable standard.

This partial recital of the misconduct or negligence of a few men is a sufficient reminder that the training of trainmen ought to be improved about 500 per cent. Every operating officer of experience must realize this need. If to accomplish such a degree of improvement implies the dismissal of some of your men and the appointment of others in their places, then it may be that the need on your road is for a large improvement in the quality of the trainmasters —mainly in their courage.

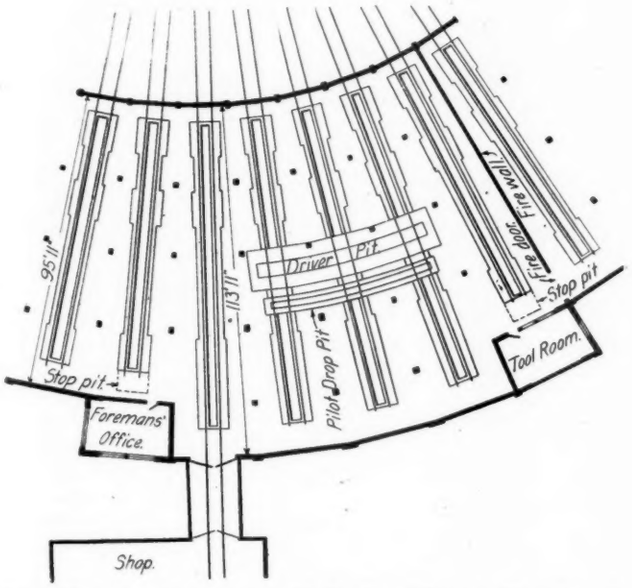
The operating officer who (because of lack of time, or of money, or of the strength and patience to get some higher officer to provide for those lacks) seeks to evade the issue presented in the foregoing argument, must comfort himself as best he can with the assurance that his record is as good as that of the next fellow. Taking things as they are, it is impossible not to sympathize with such a man. In the great unorganized university of railroading he thinks that his men come as near deserving diplomas as any that he knows of; and very likely he is right. But he must admit that there is a crying need for a few thousand post-graduate courses. Only by some such thorough means can the "average" man —or even a fraction of our thousands of average men—be put on an equality with the small percentage of conductors and enginemen who have put themselves in the A-1 class by their own efforts.

V. P. SMITH.

The Union Pacific Overhauls Its Engine Terminals

Builds Six New Roundhouses and Enlarges Others— Shop Facilities Also Increased

LIKE OTHER ROADS enjoying large proportionate increases in traffic during the last decade, the Union Pacific has been forced to make important extensions of facilities for the care and repair of locomotives. To meet a growth in traffic which is indicated by an increase in freight traffic from 10,551,296,989 gross ton miles in 1911 to 20,-



Part Plan of the Council Bluffs Roundhouse Showing the Six Long Stalls

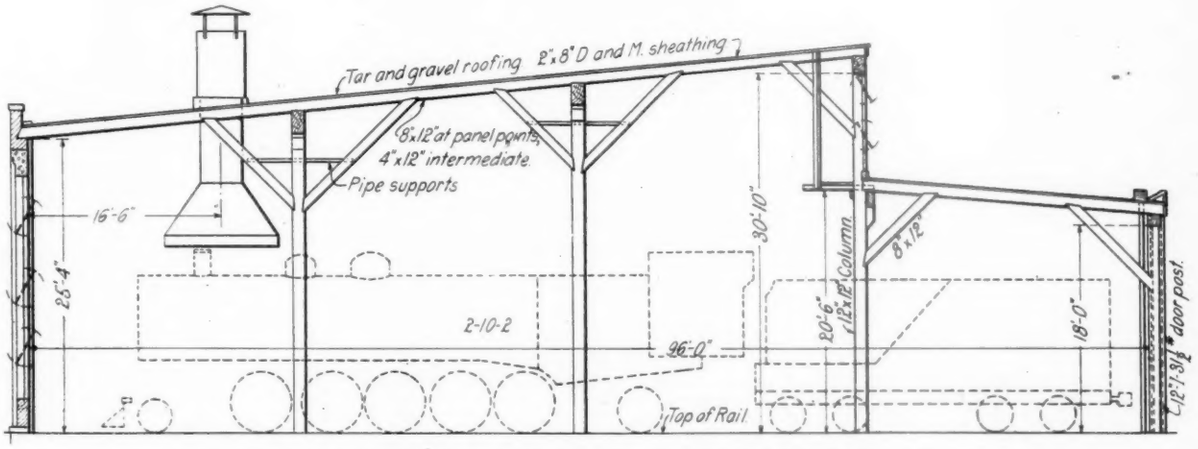
112,270,846 gross ton miles in 1918 and an increase in passenger traffic from 66,714,000 passenger car miles in 1911 to 75,605,000 passenger car miles in 1918, this road has carried out improvements in the last three years which include 216,000 sq. ft. of new locomotive repair shops, 166 new roundhouse stalls and proportionate additions to auxiliary facilities.

This program for improvements was started on a large scale in 1917. In the following year, under federal control, large additional authorizations were made, a considerable part of this work being carried over into 1919. In general, the program was divided between two classes of improvements: Additions and betterments to the two existing repair shops at Omaha, Neb., and at Cheyenne, Wyo., respectively, and extensions or renewals of engine terminal facilities including roundhouses, power houses, storehouses, coaling stations, cinder pits, water service stations, locomotive repairs shops, etc.

The extension of the shop facilities at Omaha consisted in the construction of additions to the existing shop building so that the work was essentially a continuation or enlargement of a plan previously outlined. The improvement at Cheyenne consisted in the construction of an entirely new machine and erecting shop to replace one that had become inadequate and the remodeling of the latter for use as a boiler and tin shop. As a consequence, while the plant at Omaha was and still is the principal system shop of the Union Pacific, the completion of the new building at Cheyenne has resulted in making the Cheyenne shop a much more important factor in general locomotive repairs on the road.

Each of these projects involves provision for additional power plant capacity and some rearrangement of existing facilities to make room for the improvements. In the case of the Omaha improvements, which are described at the end of this article, the power plant was the most important feature. The Cheyenne shop will be made the basis of a separate article in a later issue.

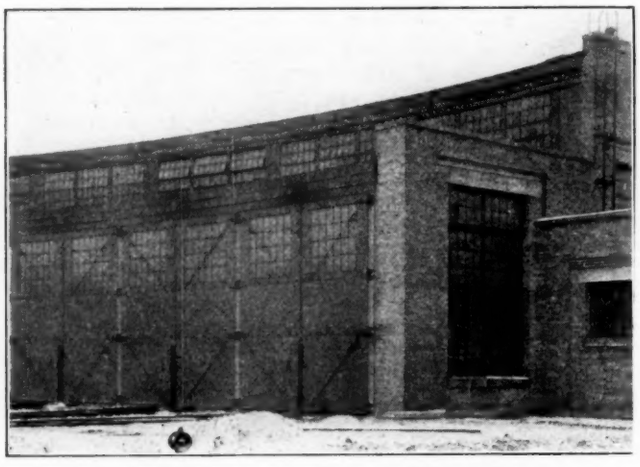
The engine terminal program was directed largely toward providing more adequate facilities along the two main traffic routes of the Union Pacific, namely, the Omaha-Ogden line and the Kansas City-Denver line. Additions to roundhouse facilities included 40 stalls at Council Bluffs, Iowa, 15 at Grand Island, Neb., and 28 at Green River, Wyo., on the first-named line and 35 stalls at Kansas City, Kan., 20 at Junction City and 14 at Ellis on the Denver line. Further improvements were made also at Hastings, Neb., and Marysville, Kan., to provide for the through traffic routed from the Ogden-Omaha line at Gibbon, Neb., to the Kansas City-Denver line at Topeka, Kan.



Longitudinal Section of a 96-ft. Stall in the Council Bluffs Roundhouse

One interesting fact in connection with the terminal work

is the number of essentially new terminals built either on entirely new sites or at least embodying complete new engine houses rather than extensions of the old ones. The improvements at Council Bluffs, Kansas City, Junction City, Ellis, Hastings and Marysville, all included entirely new engine houses. As a consequence, it was possible to adopt standard designs, modified as necessary to meet the local conditions yet maintaining the same idea throughout. The same is true of the coaling stations and auxiliary shop buildings. The coaling stations built at Council Bluffs, Grand Island, Sidney (Neb.), Junction City and Kansas City, all follow the same general design, the first two having 650 tons storage capacity, the second two, 400 tons and the one at Kansas City, 500 tons capacity. The shop buildings have steel frames, brick walls, wooden roof purlins and roofs,



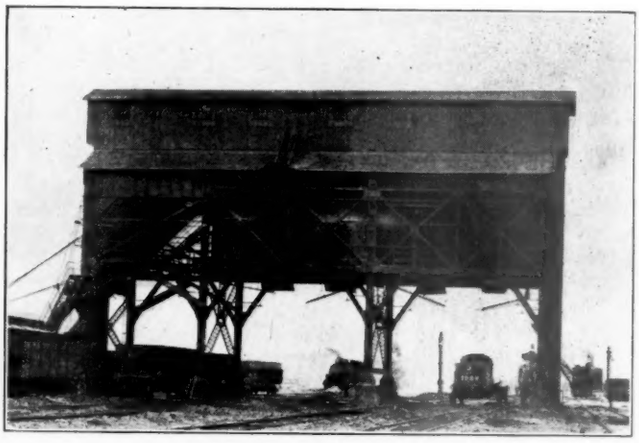
One Corner of the Council Bluffs Shop

with large window areas using fenestra sash. The floors with few exceptions are of the mastic type.

Another interesting feature of the general program for improvement is the generous provision made for running repair shops at the different engine terminals. At Council Bluffs, Ellis and Green River, machine and erecting shops approximately 70 ft. by 200 ft. have been provided which will take care of practically all running repairs, thereby relieving the roundhouses very largely of this work. In 1917 a new machine and erecting shop was erected at Evanston, Wyo., that is 100 ft. by 150 ft. and in 1918 one at Junction City, 108 ft. by 209 ft.

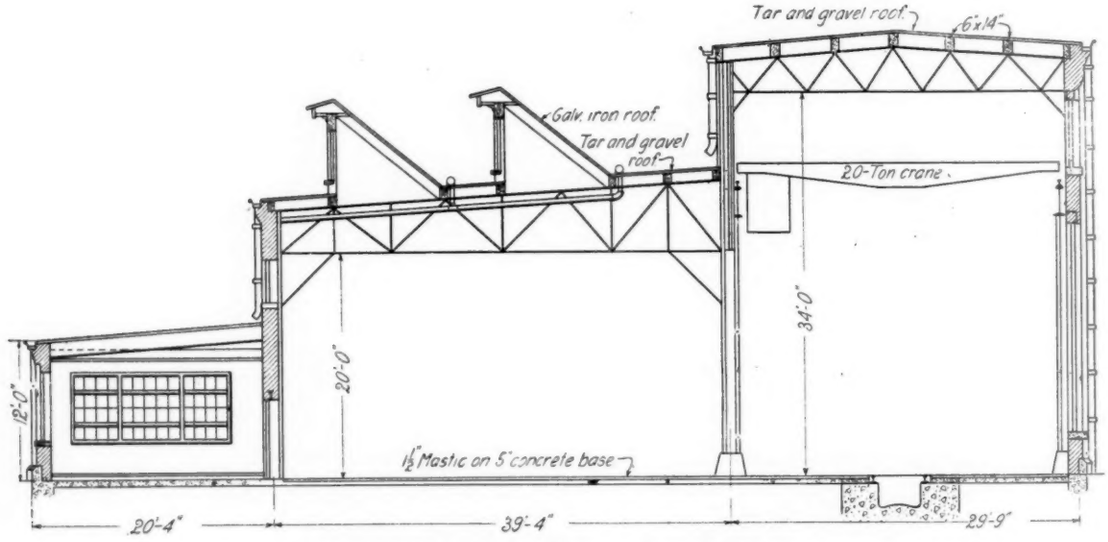
The Council Bluffs Terminal

The new engine terminal at Council Bluffs is the largest improvement of this character undertaken and is described here for that reason. The details, however, can be taken also as indicating the character of work carried out on a smaller scale at the other terminals.



The Council Bluffs Coaling Station

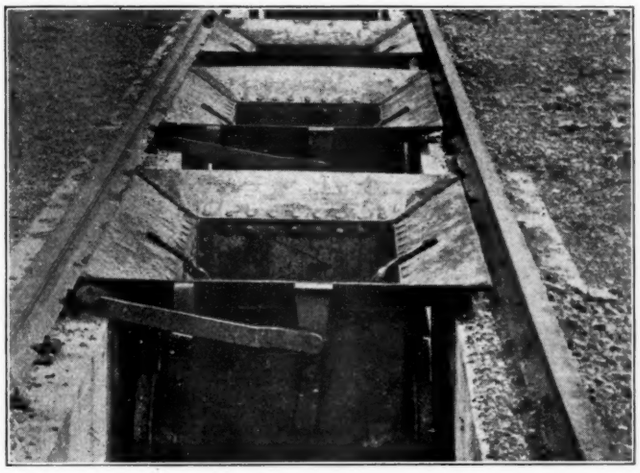
The longitudinal section through the roundhouse stall shows that the frame of the building is typical of western practice with wooden posts and girders supporting a wooden roof that is flat enough to take a tar and gravel covering, brick outer wall and end walls with large areas of fenestra sash glazed with factory-ribbed wire glass. The floor is concrete covered with Johns-Manville mastic, the smoke jacks are "J M" transite asbestos. Four fire walls divide the house into five rooms of eight stalls each, each fire wall being provided with automatic fire doors. The track doors are of wood with 24 10-in. by 16-in. window lights in the upper panel of each leaf. The door posts are composed of 12-in. 31½-lb. I-beams incased in concrete.



Cross Section of the Shop at Council Bluffs

The standard roundhouse stall is 96 ft. deep but special stalls 114 ft. deep are provided for Mallet engines. In the house at Council Bluffs there are six of these long stalls,

but only four of them are arranged to give the additional locomotive space, the other two having the added length on the outside taken up by a tool room and a foreman's office, respectively. In this connection an interesting feature has been introduced because of the more serious consequences attending the failure to stop an engine coming into either of these two stalls. To preclude any possibility of an engine going into the tool room or the office, buried concrete bumpers have been provided at the ends of the pits in these two stalls. These consist of blocks of concrete with the tops level with the floor, but provided with recesses or pockets in the line of each rail into which the leading wheels of the engine will drop in case they pass the regular stopping blocks attached to the rails. These



Hopper Cars for Handling Cinders in Track Pits at the Coaling Station

recesses are covered with plank flooring so as to introduce no obstruction in the floor but this will not prevent the locomotive wheels from breaking through and dropping into the pits.

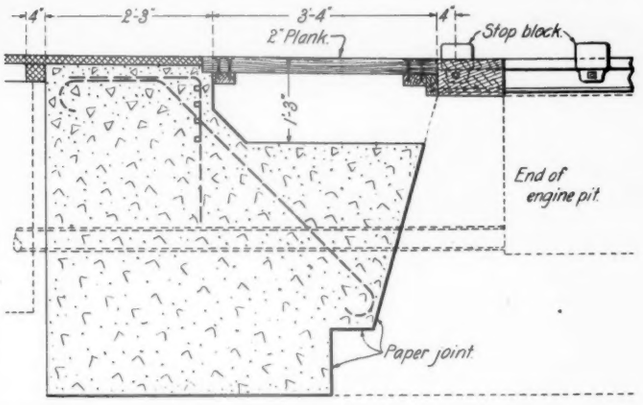
Driver and pilot wheel drop pits are installed so as to embrace the engine pits in three of these long stalls. These special pits are of the type in which the wheel jacks raise and lower the rail girders on which the wheels rest, instead of having a saddle to engage the axles of the wheels to be lifted. As a consequence, the operation of shifting out the rail girders before the wheels can be lowered into the pit is eliminated.

Contrary to the practice on many of the roads with respect to the newer engine houses, the Council Bluffs roundhouse is heated by direct radiation in the engine pits and along the rear walls. The coils in the pits are protected from falling objects by an angle-iron shelf attached to the pit wall directly above them. Toilets and locker rooms for roundhouse employees and engine crews are provided in an annex abutting against one of the end walls of the house. In accordance with demands of the enginemen, these facilities for engine crews are entirely independent of those for the roundhouse employees.

Washout, filling, blowout, cold water air and steam service lines are carried around the house on overhead supports with service cocks on each lines of posts. The Council Bluffs terminal and several of the others are equipped with washout systems occupying an independent structure adjacent to the roundhouse. The National system is used at Council Bluffs, while the F. W. Miller Heating Company's system was installed at Junction City. Artificial illumination is provided by three 60-watt lamps in each stall, two on the outer wall on either side of the windows and one on the inner wall at the door posts. These are fitted with reflectors so as to direct the light in the spaces between the locomotives. In addition to this illumination, extension chord outlets are provided on each line of posts. Other electrical service is supplied in the form of three-phase power outlets with an electric welding circuit having service stations at several positions in the house.

The Coaling Stations

One of the distinctive features of the engine terminal improvement is the standard design of coaling stations, of which five were built in the course of the last three years. The station at Council Bluffs is combined with a cinder disposal plant, whereby a portion of the equipment is used for handling both cinders and coal. This station is entirely of structural steel and spans five tracks, one coal-receiving track and four coaling tracks. The superstructure contains coal storage bins totaling 650 tons capacity over the coaling tracks and an ash storage bin over the coal receiving track. The coal and ash conveying system consists of an endless bucket conveyor with an upper leg across the top of the bin, a lower leg in a tunnel beneath the tracks and ascending and descending legs at opposite ends of the structure. This conveyor is used to carry coal from the track hopper underneath the receiving track to the coal storage bins or to take cinders from six cinder pits under three of the coaling tracks. These cinder pits are each 82 ft. long, so that the handling of the cinders from any point in the length of these pits to the hopper over the conveyor tunnel involves an additional operation, namely, small hopper cars running on tracks in the pits, these cars being equipped with a



Section Through One of the Stop Pits at the Ends of Two of the Engine Pits

bottom dump for discharge on to the conveyor. These cars and the pits are shown in one of the photographs.

A wet sand storage bin and a sand dryer house are located adjacent to the coaling station. Three coal burning sand dryer stoves are provided, together with three compressed air delivery pipes which discharge the sand into three separate bins in the superstructure over the coaling tracks.

Engine Terminal Machine Shop

The machine shop at Council Bluffs is duplicated at Green River and may be said to be typical of the machine and erecting shops provided at the new engine terminals. This building is 72 ft. wide by 209 ft. long and consists of an erecting bay 29 ft. wide and 34 ft. high, and a machinery bay 39 ft. wide, and 24 ft. high, together with an annex 20 ft. by 78 ft. for a foreman's office, toilet, locker room and tool room. The erecting bay is served by a 20-ton traveling crane and has a single track with track pit extending nearly the full length and intersected by a drop pit, thus affording relief to the drop pits in the roundhouse.

This track in the erecting bay communicates with one of the tracks in the engine house, so that engines may be moved readily from the roundhouse into the shop. The other bay of the building is used as a machine shop, blacksmith shop and tin shop. It is equipped with a 42-in. planer, 36-in. drill press, two 16-in. engine lathes, 44-in. boring mill, 24-in. by 36-in. punch and shear, a 36-in. engine lathe, a 24-in. universal grinder, a 1,500-lb. hammer and a 500-amp. welder, etc.

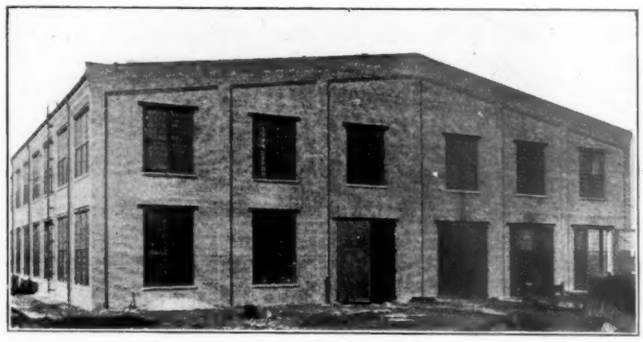
The Power House

The power house is located in a separate building and accommodates seven 256-hp. Babcock & Wilcox boilers with Laclede-Christy stokers. The building is designed to allow space for one additional boiler. The stokers are served by Link Belt coal handling machinery from a track hopper outside the building. A steam jet conveyor is provided for the removal of the cinders. One distinctive feature of this powerhouse which has been carried out also on other Union Pacific installations is the substitution of induced draft through the use of a blower for the usual tall chimney. The engine room equipment consists essentially of an air compressor and a motor-generator set for converting high-tension electric current purchased from the city.

The Omaha Shop Project

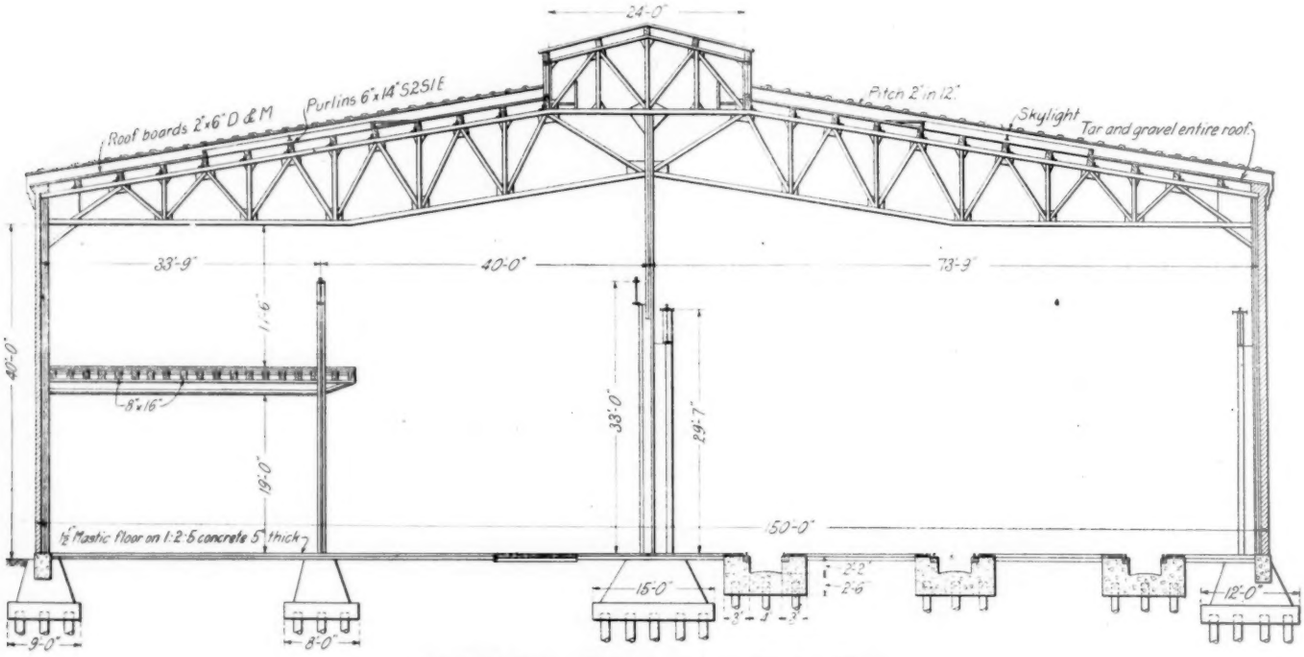
The Omaha shop project was carried out in two stages; one undertaken in 1917 and the other carried out in 1918 and 1919. The existing shops in Omaha included a machine shop and boiler shop built in 1904 and 1905 of the same cross section, 150 ft. wide, but in separate buildings, the former 400 ft. long, the latter 311 ft. long, the two being separated by a gap of 100 ft. The work in 1917 consisted in building an extension to the machine shop that filled this gap between the two old buildings, in addition to the construction of an entirely new power plant. The work commenced in 1918 comprised an extension of 200 ft. on the opposite end of the machine shop, so that these two extensions gave a shop structure 150 ft. wide by 1,011 ft. long, of which 700 ft. comprises a machine shop and 311 ft. a boiler shop.

The two extensions to the shop structure followed closely to the design of the old building erected in 1904 and 1905. An illustration shows a typical cross section of the shop which has two bays of equal width, one to serve as an erection bay and the other for the machine operations. The erecting bay has three longitudinal engine pits covering the length of the shop, except for 100 ft. at the north end. This bay also has a crane runway of 69 ft. 9 in. span and was originally equipped with two 100-ton Niles-Bement-Pond traveling cranes. In 1917 two Whiting cranes of the same capacity were added. The machinery bay has a mezzanine floor along the side next the outer wall extending the entire length of the building. The portion of this bay not occupied by the mezzanine floor is served by two 10-ton Niles traveling cranes operating on a crane runway of 38 ft. 8 in. span.



One End of the Omaha Shop

The distribution of machine tools follows the usual arrangement with light machine work, pipe work, air brake repairs, etc., handled either on the mezzanine floor or underneath it, while the open space under the cranes is occupied by the larger machine tools. The space on or under the mezzanine floor is also devoted to toilet rooms, lockers, heating plant, tool room, office, etc.



Typical Cross Section of the Omaha Shop

Each extension to the machine shop involved the addition of new heating units designed to serve as additions to the existing system which is of the indirect radiation hot air type. The hot air delivery pipes are carried in the roof

trusses with laterals extending down the walls to the floor level.

The Power House

The power house for the Omaha shop not only provides compressed air and heat for the various buildings in winter, but also produces electrical energy for lighting and the shop operations. The installed boiler capacity is 3,250 hp. provided by eight units of Sterling water-tube boilers of 406 hp. each, equipped with Green stokers. The induced draft system is used here also for which purpose the boilers are grouped in two sets of four boilers each, which are served by Sturtevant No. 200 fans operated by steam engines. Both coal and cinders are handled by a Jeffery bucket conveyor to overhead bins. This conveyor is located in a transverse position at one end of the boiler room and delivers coal from a track hopper to a conveyor belt, which in turn delivers the coal to the bunkers over the boiler room. The cinders are handled from the cinder pockets under each of the boilers to the Jeffery conveyor by means of hopper cars operated on a 24-in. gage track in the basement of the boiler house.

The engine room of the power plant contains a 750-hp. Curtis General Electric turbine generator; two 500-hp. Westinghouse-Parsons turbine generators, two 250-hp. Westinghouse vertical compound engine generator sets and also two two-stage compound engine air compressors of 3,500 cu. ft. of free air capacity each. All steam lines are carried to the various units in the basement of the engine room.

The power house is on pile foundation, the boilers being carried by the structural frame of the building, but each of the engine units in the engine room is carried on a pile foundation independent of the building.

All of the engine terminal and shop improvements were designed and constructed under the direction of the engineering department of the Union Pacific. The 1917 work at Omaha, including both the power plant and the shop extension, were built by the Westinghouse, Church, Kerr Company, New York City. The subsequent extension to the machine shop building was built by the Home Builders, Inc., Omaha. The terminal improvements at Council Bluffs, Iowa, and at Green River, Wyo., were made under contract by the Lynch-Cannon Engineering Company of Salt Lake City, Utah.

Rates on Articles in Common Use

THAT THE INCREASE IN FREIGHT RATES recently authorized by the Interstate Commerce Commission, when applied to most articles of food or clothing or other things in common use, in the quantities in which they are ordinarily purchased, are so small as to have a very slight effect on retail prices, is shown most clearly in figures just compiled by the Bureau of Railway Economics showing the old and the new rates on the ordinary retail sales unit of typical commodities transported from their principal sources of supply to various points of destination throughout the country.

The bureau has compiled a series of tables showing the actual rates, the distance, the shipping weight and the increase for about 20 commodities in common use, to a dozen or more of the principal cities. These have been distributed to the railroads and examples applying to the different localities are being given wide publicity.

As an illustration, the table showing the rates to Chicago is as follows:

RELATION OF RECENT FREIGHT RATE INCREASE TO RETAIL SALES UNIT OF TYPICAL COMMODITIES TRANSPORTED FROM THEIR PRINCIPAL SOURCES OF SUPPLY TO CHICAGO, ILLINOIS

Commodity	From	Distance (Miles)	Retail sales unit	Average shipping weight sales unit (Pounds)	Freight rates in cents per retail sales unit from point of origin to point of consumption				Freight rate increase in cents per retail sales unit	
					Old rates		New rates			
					Carload (Cents)	L. C. L. (Cents)	Carload (Cents)	L. C. L. (Cents)	Carload (Cents)	L. C. L. (Cents)
Clothing, men's	New York, N. Y.	955	Suit	4.0	4.500	4.500	6.300	6.300	1.800	1.800
	Rochester, N. Y.	581			3.160	3.160	4.420	4.420	1.260	1.260
	Philadelphia, Pa.	880			4.260	4.260	5.960	5.960	1.700	1.700
Shoes	Boston, Mass.	1,014	Pair	3.75	4.219	4.219	5.906	5.906	1.687	1.687
Hats, felt	New York, N. Y.	955	One	0.8125	0.914	0.914	1.280	1.280	0.366	0.366
	Philadelphia, Pa.	880			0.865	0.865	1.211	1.211	0.346	0.346
Beef	*a*	...	Pound	1.0	.....	.....	.....	.....	.....	.....
Flour	Minneapolis, Minn.	525	Sack	10.0	1.250	3.150	1.700	4.250	0.450	1.100
	Kansas City, Mo.	518			1 500	4.000	2.050	5.400	0.550	1.400
Sugar	New York, N. Y.	955	Pound	1.0	0.450	0.600	0.630	0.840	0.180	0.240
	Philadelphia, Pa.	880			0.430	0.585	0.600	0.820	0.170	0.235
Potatoes	Maine	1,110	Peck	15.0	6.750	7.875	9.450	11.025	2.700	3.150
	New Jersey	954			6.750	7.875	9.450	11.025	2.700	3.150
Tea	New York, N. Y.	955	Pound	1.0	1.125	1.125	1.575	1.575	0.450	0.450
	Boston, Mass.	1,014			1.125	1.125	1.575	1.575	0.450	0.450
Oranges	California	2,222	Dozen	6.0	8.640	25.500	11.670	34.440	3.080	8.940
Milk	Chestertown, Ind.	41	Quart	*c*	*b*	0.900	*b*	1.075	*b*	0.175
				d	*b*	0.734	*b*	0.875	*b*	0.141
				e	*b*	0.650	*b*	0.775	*b*	0.125
Pianos	New York, N. Y.	955	One	825.0	816.750	928.125	1.142.625	1,299.375	325.875	371.250
	Boston, Mass.	1,014			816.750	928.125	1.142.625	1,299.375	325.875	371.250
Automobile tires	Akron, Ohio	388	One	22.0	9.900	14.850	13.860	20.790	3.960	5.940
	New England	1,014			16.500	24.750	23.100	34.650	6.600	9.900
Sewing machines	South Bend, Ind.	86	One	121.0	25.410	50.820	35.695	71.390	10.285	20.570
Typewriters	New York, N. Y.	955	One	45.0	50.625	50.625	70.875	70.875	20.250	20.250
	Ilion, N. Y.	635			40.500	40.500	56.700	56.700	16.200	16.200
Paint	Cleveland, Ohio	340	Quart	4.5	1.058	2.025	1.485	2.835	0.427	0.810
Vacuum cleaners	*a*	...	One	26.0	.....	.....	.....	.....	.....	.....
Ford cars	Detroit, Mich.	298	One	1,580.0	1,098.100	2,488.500	1,540.500	3,483.900	442.400	995.400
Plows	South Bend, Ind.	86	One	69.0	10.005	20.700	14.145	28.980	4.140	8.280
Newsprint paper	Watertown, N. Y. dist.	916	Pound	1.0	0.300	0.690	0.420	0.965	0.120	0.275
	Maine	1,142			0.330	0.750	0.460	1.050	0.130	0.300

a Also originated at Chicago.
b Rates not reported.
c Basic rates quoted in cents per 5 gallon can.
d Basic rates quoted in cents per 8 gallon can.
e Basis rates quoted in cents per 10 gallon can.

The Association of Railway Executives has authorized a statement in which it explains that:

"The above figures do not represent all the transportation costs. In shoes, for example, there is the cost of carrying the hide from the slaughter house to the tannery, from the tannery to the shoe factory, from the factory to the shoe store, as well as the freight on linings, thread, etc., but all these charges are in small fractions of a cent and the sum of all of them is very small in proportion to the final value of the finished product. The increased freight rate on a trainload of wool, for example, becomes very trifling when divided among thousands of suits of clothes. In the case

of heavy commodities such as coal and steel, where labor and transportation are the most important items in the cost of production, the increase would naturally be larger."

Inspection of Shadle Automatic Train Signal and Stop

On September 22, the Cincinnati, Indianapolis & Western conducted an inspection and series of tests of the Shadle automatic train signal, control and stop, which has been in service on one passenger engine and in the process of development for several years. The purpose of this inspection was not to demonstrate a final or finished automatic train control installation, but to show how commercial appliances that are now used by the mechanical, signal and electrical departments may be applied to a scheme of this kind; and also to demonstrate that the present arrangement will perform the functions that are considered necessary and desirable.

This automatic train signal, control and stop system was designed and is being developed by C. F. Shadle, efficiency engineer of the C. I. & W. It is of the intermittent electrical contact type with 60 ft. ramp rails located in advance of automatic or other signals and controlled by the track circuits of the automatic block system. The installation is on the Indianapolis division of the C. I. & W. in single track automatic block signal territory east of Indianapolis, Ind.

The equipment on the engine and tender is briefly described as follows: The ramp shoe is mounted on the side of the rear truck on the tender and in passing over a ramp picks up the current from the wayside circuits. It also operates a circuit controller mounted above the ramp shoe. The electrical energy for operating the engine equipment is obtained from storage cells mounted on the tender. The signal lights are located on the tender back of the engineman and a release switch which is used in connection with the automatic control equipment is mounted on the tender next to the signal lights.

This switch is operated by a cord which is carried into the cab just above the engineman's head. Three iron-clad electro-magnets, which operate circuit controllers, are suspended under the tender. One of these magnets operates in conjunction with a tachometer which is mounted on the front bumper of the locomotive. The tachometer is driven by a flexible connection attached to one of the axles of the engine truck. This combination is used to operate the automatic speed control features. Another magnet picks up when ramp contact is made. The third magnet is used for operating signal lights, besides controlling an electro-pneumatic valve for maintaining the feed valve of the air brake system in the normal position; it also controls the automatic service brake valve. The two valves which are used in connection with the automatic control system are located under the cab in the standard airbrake equipment.

A special train was provided for the tests. It included a passenger locomotive which is in daily service between Indianapolis and Cincinnati, equipped with the automatic train signal, control and stop appliances, two mail cars, a dining car and a business car. The train, including the engine, weighed about 407 tons. All the cars had six-wheel trucks equipped with clasp brakes. The engine was provided with E T-6 Westinghouse brake equipment. The reservoir pressure was 110 lb. and the brake pipe pressure was 90 lb. The day was clear, hot and dry. A speed indicator and air gages for indicating brake pipe, brake cylinder and auxiliary reservoir pressures were provided for the observers' information in the business car attached to the rear of the train.

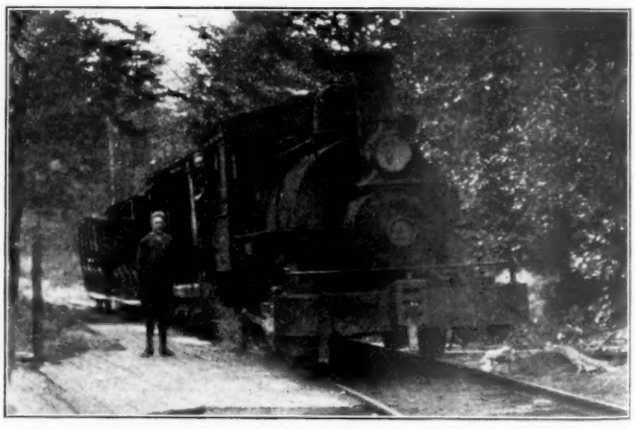
The special train left the Union Station about 1:30 p. m. and proceeded eastward to the east end of Indianapolis yard, from which point it continued through the protected territory, under test, to New Palestine, 12 miles east. The train then backed up about two miles to an eastbound signal at Julietta, where the party had an opportunity of inspecting and investigating the engine and roadside equipment. Following this inspection the remaining tests of the series were made. The automatic block signals were set by signalmen located at the various signals that were to be operated.

The first test was made to show the behavior of the apparatus when the special train followed an imaginary local train that stopped at all stotions. The wayside signals were set to indicate alternately, clear and caution. The second test was conducted to demonstrate the results that would be obtained if the special train followed another train through a caution block into an occupied block and then into a caution block.

The third test was to show the behavior of the apparatus when the special train entered a caution block from a clear block at high speed and then from the caution block at limited speed into a clear block. The fourth test was conducted to determine the maximum speed of the train when the brakes released after an automatic application had been made through the control equipment. The fifth test was conducted to show the behavior of the automatic control equipment if the train proceeded at high speed over a caution ramp with the release switch held in the releasing position.

In all of these tests the signal lights on the locomotive operated as intended when the train passed over the ramps and when the enginemen operated the release switch. Upon entering a clear block the signal lights showed green and in a caution or occupied block the yellow light appeared. Following the display of a yellow light, if the engineman operated the release switch, both the green and yellow lights appeared, thus indicating a limited speed block.

The automatic control apparatus operated when the train passed over a ramp into caution or occupied block and the brakes were set in very much the same manner as would be the case if the application were made by an engineman. When the release switch was operated in a caution block the apparatus provided for the release of brakes and if the train operated in a caution block at a speed greater than that for which the equipment was adjusted the brakes were set and the speed reduced.



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Locomotive Formerly Used on the Brooklyn Bridge Now Seeing Service in the Adirondacks

Two Great Problems Before American Railroads*

Will a Six Per Cent Income Attract New Capital?; Can Pre-War Efficiency be Re-established?

By Brigadier General W. W. Atterbury
Vice-President, Pennsylvania Railroad

THE RAILROAD situation is, as I can well appreciate, of paramount interest to the business men of Harrisburg. Unfortunately, however, the subject is so broad that I cannot attempt a general discussion, but will endeavor to clarify the most vital and essential of the unsolved problems which at present affect our railroads.

The speaker presented a brief summary of recent railroad history, explaining that the Transportation Act has created no guarantees whatever, save the temporary one which expired on September 10. At the freight and passenger rates fixed by the Commission, the railroad are left to compete with each other for the traffic which their district affords, and to sink or swim as best they may. It is the express purpose of the Transportation Act to retain competition and the spirit of enterprise which it engenders. There is no coddling of the railroads in the Act. There are no charities or subsidies. There are no comforting guarantees for weary or discouraged managements to fall back upon.

If, under the new law, the railroads of this country are able to give satisfactory service, progressively extend their facilities so as to keep abreast of the times and provide their owners with a just and reasonable return upon the savings which build these great properties, an achievement will have been recorded second to none in American business history.

The public and the press I feel we have with us in sympathy and good will. The Interstate Commerce Commission feels its responsibility and is most constructive in its policy. The state commissions, with a few exceptions, are going along with the new spirit of constructive public regulation. Congress, for the first time in the history of American railroad legislation, sincerely threw the weight of the law-making power upon the constructive side.

The 26 months of actual federal possession and operation, plus the six months of guarantee, which was really a transition period, make altogether a period of 32 months, in which a great deal has happened. Roughly speaking, railroad wages have been doubled. Efficiency of employees, measured by production per hour, has fallen seriously; it can be conservatively stated now not to exceed 75 per cent. Material prices have been doubled and trebled. Freight rates have been advanced a total of about 70 per cent and passenger rates about 40 per cent. During the period we are considering, rates for transportation on American railroads have advanced less than other prices. America's railroad transportation is today its cheapest commodity, gaged by a day's labor, a bushel of wheat or a ton of coal; for each will buy more miles of transportation, either passenger or freight, than ever before in our history. To complete our survey we must consider that roadbed and rolling stock are worn and depreciated by the stress of war traffic and undermaintenance, and that urgent needs for more transportation than the railroads have ever given, are now pressing everywhere.

This survey brings me to a statement of the two great problems into which the situation seems to resolve itself: (1) whether the 5½ to 6 per cent return on railroad valuation provided by the Transportation Act will be sufficient to attract new capital, and (2) can the pre-war efficiency be accomplished. As to the adequacy of the 5½ or 6 per cent average return, it is obvious that the earnings of the railroads must be sufficient to do two things: one is to properly maintain the railroads in their present condition, the other to provide credit sufficient to attract new capital necessary to furnish facilities to meet the growing requirements of our country. By careful and efficient management we hope to be able to maintain our property and to continue our record of 74 years of uninterrupted dividends. I must confess that, for the present time at least, I am not optimistic as to attracting new capital.

The highest credit in the world today is that of the United States government, and it is on about a 6 per cent basis. The Republic of France, with the greatest reputation for thrift of any of the large nations, has just floated a loan which cost her about 9 per cent. The securities of Great Britain, the head of the world's greatest empire, can be bought to return 8 or 9 per cent. Switzerland and Belgium have each put out loans on close to a 9 per cent basis, while our great transportation systems like the New York Central, The Pennsylvania and the Southern Pacific have each had to pay close to 7½ per cent.

In view of these facts, how can we find a real credit basis for our American railroad companies, competing with each other for a 5½ to 6 per cent return and forced to divide with the government anything that any individual company, by good management, luck or favorable location, may be able to earn above the latter figure? The stock of our own company, paid in dollar for dollar and some of it issued at premiums, and representing, owing to the "ploughing in" of earnings during the past years, perhaps two dollars of equity in invested value for every dollar face value of the shares, is selling on the market at 16 per cent below par.

Many other conservatively capitalized and efficiently managed railroad companies are in the same position. We cannot sell new stock at par with old issues below par. The bond market for the best corporate securities is far above 6 per cent, so we can today raise no money at rates which the Transportation Act permits us to earn. We may be forced to pay on a 7 per cent basis for refunding; but where is the money to come from for improvements?

The present provisions of the Transportation Act regarding the average rate of return remain in force until March 1, 1922. After that date, the Interstate Commerce Commission is empowered to fix such rate of return as the circumstances may justify.

Meantime we must live under the provisions of the Act and strive, by care and economy, to give as satisfactory service as possible with the existing plants, while protecting existing investments. For such improvements and extensions as it is imperative to make in the near future, the best solution would seem to me to be that advocated last week in Washington by our president, Mr. Rea, before the Interstate Commerce Commission, namely, a more liberal policy with regard to government advances at interest rates which the provisions of the Transportation Act give reasonable assurance of ability to earn. Certainly, with an average earning power of 6 per cent. we cannot go on indefinitely bor-

*Abstract of an address before the Harrisburg (Pa.) Chamber of Commerce on September 29.

rowing at 7 per cent. or 8 per cent without inviting financial disaster; and that would be far more harmful to the country as a whole than even a continued shortage of railroad facilities.

The Problem of the Personnel

So much for financial matters. When we come to the second of our great problems—namely, that of restoring prewar efficiency, we find ourselves facing a situation of a very different nature. We are confronted, not with the rigid terms of a government statute, but with the most complex questions of human relationship—the aftermath of the great war.

There was a time when the vast majority of the men on the Pennsylvania Railroad were genuinely proud of the company for which they worked. It was a distinction to be known as a "P. R. R. man." We had what we called the Pennsylvania Railroad standards and believed, and were proud of the belief, that they were the highest of any railroad. The men were just as proud of those standards as were the officers, and just as jealous in preserving and safeguarding them. There was a spirit from top to bottom of the organization that united in their purpose our officers and men. This is the spirit that we must re-establish.

There are still many thousands of men on the payrolls of our railroad and on other roads of the country who, I am most happy to say, continue to take the old-time pride and satisfaction in their work. They are largely the older employees and it is hard to see how we could get along if we did not have them with us now. They deserve and have our sincere gratitude. But I regret that there are also on our road, and on the others too, large numbers of men—mostly younger and less experienced—who have never known the pleasure that comes from a job well done, nor the satisfaction that comes from loyalty. These are the men whom we must educate.

In general, the principal contributing causes of the present situation were: The inevitable contact with political influences during government control: The adoption of a policy under the railroad administration which, unintentionally perhaps, established the closed shop in railroad work through the enforcement of national agreements, the consolidation of control of all labor matters in Washington and the intentional abolishment of piece-work in railroad repair and construction shops; The elimination of all incentive to individual effort by (in effect) placing all men in their individual crafts all over the country under similar working conditions and wages; The establishment of national boards of adjustment, to which the final settlement of local grievances and cases of individual discipline could be appealed.

There are thousands of men on the railroads today who believe, with more or less conviction, as a result of the propaganda put forth by the leaders of the labor organizations, that the interests of capital and of labor, of employer and of employee are opposite and hostile and not mutual and supplementary; that the worker owes no loyalty to his job; that his proper attitude, until capital and property can be destroyed, is to demand as much money as it is possible to exact and do as little work as he can "get away with."

A saner and more American view of life and duty must be realized. The public should unitedly support the railroad managers in their endeavor to bring this about. The sure way to accomplish this result is to carry out the spirit of the Transportation Act and restore each railroad system completely to the status of an individual operating unit, each road dealing with its own men independently and free from interference by political influence. Among the most important questions pending in this connection is whether we shall perpetuate national agreements and national boards of adjustment, established under Federal Control; or whether we shall, in accordance with the provisions of the Transportation Act, establish our own set of working conditions by and between our own officers and men, which will meet our own situation, with local boards of adjustment for the individual railroad to interpret its own schedules of wages, and to settle differences or grievances arising between the officers and the men.

If we have local boards of adjustment we shall be complying with the general theory of the Transportation Act, which is to perpetuate the identity of the different railroad systems.

If we have national boards of adjustment, we shall inevitably return to political domination in railroad labor matters, permanently impair the disciplinary powers of the officers, and force the closed shop on all the railroads. The latter result will come about at once from the fact that the labor representatives on the national boards of adjustment would be union men, and none but union men would hope to receive consideration at their hands. The inevitable outcome would be nationalization of the railroads.

This nationalization of the railroads, through the national agreements and national boards of adjustment, is on the cards at the present moment; and to my mind it is one of the most important questions now before the public. The labor leaders themselves do not deny what they have in mind; in fact, they are perfectly frank about it. I quote from Foster's book on the great steel strike, as follows:

"When the steel unions launch the next big drive to organize the steel workers (which should be in a year or two) they ought to be prepared to meet the formidable employer combinations, sure to be arrayed against them, by opposing to them still more formidable labor combinations. The 24 unions should by then be so allied with the miners' and railroad men's organizations that, should it come to a strike, these two powerful groups of unions would rally to their aid and paralyze the steel industry completely, by depriving it of those essentials without which it cannot operate, fuel and rail transportation. How effective such assistance would be was well indicated by the speedy and wholesale shutting down of steel mills, first during the general strike of bituminous miners in November and December of 1919, and then during the 'outlaw' railroad strike in April, 1920."

Why cannot we, as a country, learn the lesson of events in England, France, Italy and Denmark, without the misery of learning by our own experience?

Good Service; Good Results Already

There is another thought which I wish to leave with you and which should be clearly grasped by the general public and by railroad employees. It was expressed in these words by the president of our company in a recent general notice to the working forces:

"We should never forget that railroad wages are paid by the people who use the railroads; there is no other source from which they can come. Satisfied patrons, receiving good service and counteous treatment, are far more likely to continue willing to pay the rates necessary to maintain generous wage levels than are patrons who are poorly served or discourteously treated."

I trust that nothing that I have said will lead you to believe that no progress has yet been made toward a better state of affairs since the termination of Federal control.

Very material betterment has been accomplished since March 1, and results are becoming more clearly visible every day. On our own road, here are a few of the things we have been able to do: In six months, from March to August inclusive, we reduced, by 40 per cent, the average number of engines daily held out of the service for repairs. In the same period, we put in order 38 per cent more engines than were repaired in the corresponding months of 1919. We cut down "bad order" freight cars between March and Sep-

tember by two-thirds, and as compared with the high record for "bad order" cars in 1919 we have reduced by four-fifths the number of cars unavailable for use on account of poor repair.

At the opening of the present month, we had cut "bad order" cars down to exactly 3 per cent, which is 1 per cent under the mark (4 per cent) set for attainment by the Association of Railway Executives. In August we delivered more coal to New York Harbor than was ever before hauled to that port by a single railroad in any month; and we made new high marks at Philadelphia and Baltimore. We set new records in the average loading per car for both bituminous and anthracite coal, thus economizing in the use of equipment.

In four months, from May to August, we nearly tripled the total tonnage of coal delivered to the tidewater and lake ports.

Between April and August, we increased by 43 per cent the average number of freight cars of all kinds daily despatched. In the same period we increased by 27 per cent the volume of passenger train service rendered and brought up the number of trains on time from 77 per cent of the total operated, to more than 85 per cent; and the number making schedule time from 88 per cent, to more than 93 per cent.

Lastly, since July, we have cleared our yards, tracks and terminals, by getting out of the way and back to the companies which own and need them, more than 50,000 empty cars which were clogging our tracks, and we have thereby put the Pennsylvania Railroad in much better shape to handle fall and winter traffic.

We feel that we have made a real beginning toward getting back to our old standards. What we have up to this time accomplished is still far short of the mark, but nevertheless, it is a start. To complete the work we need that genuine co-operation of all our own men, of which I have been speaking, and of the public. Public sentiment, properly expressed, can probably do more than any other single thing in helping us to accomplish this end.

I am optimistic. I am sure that through the continued earnest work of our loyal officers and men the high standards of the Pennsylvania Railroad will again be achieved, and the people of Pennsylvania again be proud of the railroad which now carries the name of the State through 12 other great commonwealths.

But, with all our efforts, this cannot be accomplished without the continued support, confidence and sympathy of the Harrisburg Chamber of Commerce and similar organizations throughout the country, which we seek and urge.

Loans from the Revolving Fund

WASHINGTON, D. C.

THE INTERPRETATION of the provision of the Transportation Act which requires the Interstate Commerce Commission, in approving a loan to a railroad from the revolving fund, to certify that the applicant, in the opinion of the commission, "is unable to provide itself with the funds necessary from other sources" than the government, was the subject of a hearing before the commission at Washington on September 23.

The Treasury Department had returned to the commission a number of certificates because the commission in making its certifications appended the qualifying words "except at excessive rates of interest." Alfred P. Thom, general counsel for the Association of Railway Executives, and others who appeared on behalf of the railroads, argued that the commission, in administering the provisions of the act relating to the loan fund, must interpret them in the light of the declared policy of Congress in favor of fostering and preserving in full vigor the instrumentalities of transportation. Chairman Clark stated that the attitude taken by the Treasury Department that the commission must issue an unqualified certificate had led the commission to give further consideration to the questions raised.

Mr. Thom said that there was no doubt that the original intent of Congress was that preference should be given in the making of loans to the weaker roads, but that there had been no demand from the so-called weaker roads for loans to anywhere near the amount of the fund. He agreed with the Treasury Department that it is entitled to an unqualified certificate that the carrier is unable to provide itself with funds elsewhere, but said that if a wholly technical construction of the law were used the fund would not be used and the purpose of the law would be defeated. He pointed out that Congress, by an amendment of the law adopted on June 5, had taken discretion away from the Treasury as to the making of loans and that the entire responsibility was with the Interstate Commerce Commission.

Mr. Thom argued that an inability of a railroad to borrow money did not necessarily mean a physical impossibility but a business inability to borrow at any rate of interest it could afford to pay. A carrier might get money at 20 or 50 per cent in the open market, but it was of the highest importance to the public that the carriers' financial transactions should not be such as to cripple them in the future, and if a carrier could not borrow money except at such a rate as would affect its future credit, the commission would, under the circumstances, be justified in certifying a loan in the language of the law.

In reply to a question by Mr. Thom as to how much of the revolving fund had been used, W. A. Colston, director of the Bureau of Finance, said that loans aggregating approximately $60,000,000 had been certified to the Treasury, including those which had been held up, but that within the next two weeks the loans certified probably would amount to $100,000,000. Mr. Thom asked whether a wholesome situation is represented by the fact that so little of the money has been put to work in the seven months since the law was passed.

A. H. Harris, vice-president of the New York Central, said that his company had borrowed as much money as it regarded proper from other sources and that it needs additional money from the revolving fund.

George Whitney, of J. P. Morgan & Co., said that the New York Central had already obtained $61,000,000 in recent months and that his company did not feel it could advise the road to attempt the sale of another issue of securities at this time, as such a course would hurt the general market.

Samuel Rea, president of the Pennsylvania, which has already issued $50,000,000 of 7 per cent bonds, also pointed out that it would be impracticable for his company to attempt to borrow in the market the additional sums which it needs and that as a practical matter it is dependent upon the revolving fund.

The commission on September 27 announced that it had certified loans to the Virginian, Ann Arbor, Western Maryland and Maine Central, as noted in our financial news columns.

The certificates issued in these cases were unqualified in the statement that the carrier is unable to provide itself with the funds necessary from other sources, and it is understood that whenever the commission does give its approval of loans it will do so in this form. If it is unable to satisfy itself that the rate of interest which the carrier will be required to pay elsewhere is sufficiently high to make it practically impossible for the road to borrow money with reasonable prudence, it probably will not issue the certificate at all.

Southern Pacific Continues Rate Information Campaign

"How the Increase in Rates Will Affect the Consumer" is the headline of one of the new information cards which the Southern Pacific Lines in Texas and Louisiana are now posting at stations. There are six cards in all, the others being headed respectively—"Homely Necessities, How the New Freight Rates Will Affect Them," "Home Building Not Interfered With by New Rates," "The Farmer Interested, New Freight Rates Affect Him Slightly," "Service and Rates, Railroads Better Enabled to Fulfill Obligations," and "Ratio of Freight Rates to Commodity Values."

This campaign supplements a previous one carried out before the recent increase in freight rates which was intended to show the relation of freight charges to the cost of living. Like the previous campaign, which was described in the *Railway Age* of July 16, 1920, page 98, the present campaign is intended to show how slight the increase in rates is when worked out to a unit of the commodity in question. Thus the card dealing with service and rates, showing the old and new rates on various home luxuries, reads: "That the increase in freight rates authorized by the Interstate Commerce Commission will add slightly to the cost of certain articles goes without saying, yet even as affecting commodities ordinarily classed as luxuries it may be seen from a comparison of the old and new rates, as shown here, the increase is trifling when compared with the cost and importance of the article itself. Service, after all, is the great necessity and the new rates will permit the railroads to meet their obligations to the public in this respect."

SOUTHERN PACIFIC LINES INFORMATION CARD No. 1—SERIES No. 2

HOW THE INCREASE IN RATES WILL AFFECT THE CONSUMER

TO THE PUBLIC:

Supplementing our set of figures showing freight costs on various articles of daily consumption as in effect at time cards were issued, we now beg to reprint these figures, and to the right thereof, the rates that will be in effect as the result of the increase granted by the Interstate Commerce Commission and their effect on commodities named, indicating how little the individual will be affected or the price per unit increased, by their application.

THE MANAGEMENT.

HOW THE RATE AFFECTS FOOD AND CLOTHING

	FORMER RATE	NEW RATE
Freight Charge on One Suit of Clothes	6 5/10 Cts.	8 7/10 Cts.
" " " " " Underwear	1 2/10 "	1 9/10 "
" " " Shirt	9/10 "	1 2/10 "
" " " Pair of Shoes	4 5/10 "	6 3/10 "
" " " Man's Hat	3 5/10 "	4 6/10 "
" " " Pair Socks	2/10 "	3/10 "
" " " Pound of Bacon	4/10 "	6/10 "
" " " " " Flour	5/10 "	7/10 "
" " " Can Vegetables	1 3/10 "	1 9/10 "
" " " Pound of Lard	4/10 "	6/10 "
" " " " " Sugar	2/10 "	5/10 "
" " " " " Fresh Beef	5/10 "	7/10 "
" " " " " " " on hoof	4/10 "	6/10 "

Rates shown include weight of container, and apply from points where articles are manufactured.

* Rate on Beef on Haul Based on Average Haul of 350 Miles.

GROUP ONE

The cards, as noted above, are six in number. They are of different colors and about 11 in. by 14 in. in size. They are meant to follow in succession at intervals of about two weeks. As in the previous campaign, the rates are worked out for certain groups of stations, there being five groups in all. The card reproduced here shows old and new rates for group one and is No. 1 of the six to be posted at stations on the Texas & New Orleans main line and Galveston division, covering stations Orange, Beaumont, Sabine Pass, Houston, Galveston and stations between.

The Coal Miners in England

By Robert E. Thayer,
European Editor of Railway Age

London, September 14, 1920.

The question of the hour in England today is "Will there be a coal strike?" The answer is that it is impossible to believe such a thing possible:—Look at the distress it would cause—Think of what it would do the English industry which has made such a splendid record in re-establishing itself. A coal strike would severely cripple Great Britain. Even the talk of a strike has greatly interfered with business. The rate of exchange reflects the seriousness of the situation. To-day the pound sterling is quoted at less than $3.50. Must the miners have their "fling" as the railway men did a year ago? It certainly looks that way.

England's coal industry is still in the hands of the government. On May 12 last, the price of household coal was increased 14 shillings 2 pence (about $2.80) per ton bringing the total cost up to about $11.

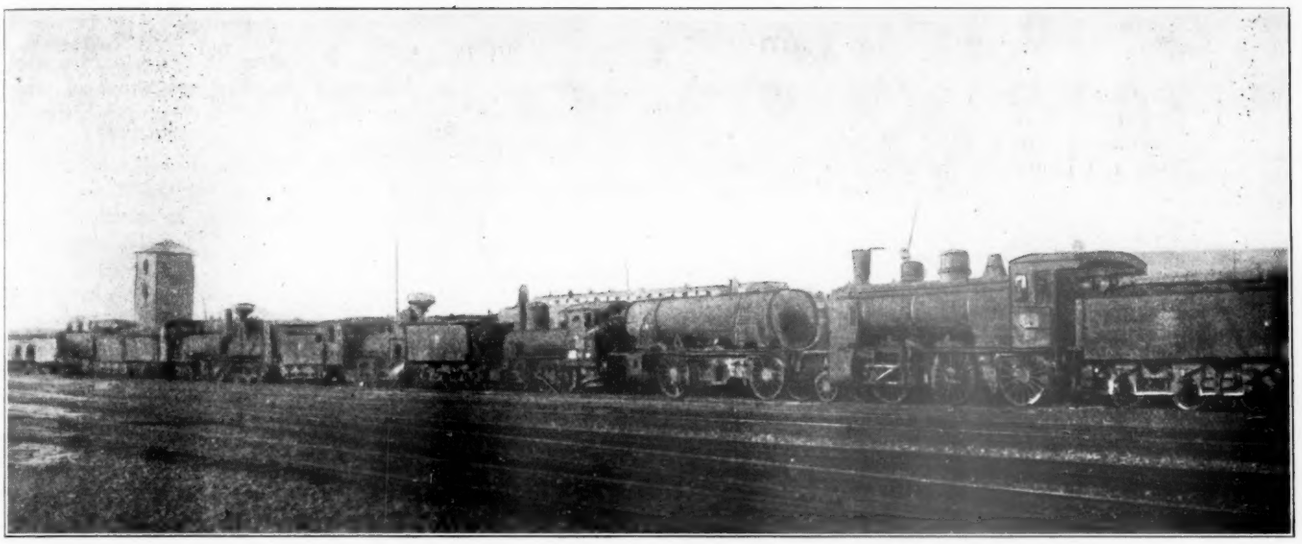
At that time the Labour Party challenged the decision to the increase in the House of Commons and lost by a vote of 185 to 49. Later Robert Smillie, the head of the Miners' Federation said: "The question of coal prices is our business." The miners now demand that the 14 shillings 2 pence increase be removed. At the same time they demand an increase in wages of two shillings (40 cents) per shift for men, with corresponding increases for youths and boys. The government wants to submit this demand to independent arbitration by the Industrial Court but the miners refuse.

The miners claim that yearly profits for the industry under existing rates will be £66,000,000 ($264,000,000 at a $4 rate of exchange) and the government claims only £32,000,000 ($128,000,000). The government shows further that the output for the second quarter of this year, as compared with the first, has decreased while the earnings per person employed has increased as follows:

	1st quarter.	2nd quarter.
Tonnage mined	62,057,000 tons	58,144,000 tons
Tonnage mined per employee	53 tons	49.33 tons
Earnings per person employed	£54. ($216)	£56. 9. 8. ($226)

Further, the two-shilling increase demanded by the miners would cost the industry £27,000,000 and the reduction in the price of household coal demanded would amount to £36,000,000—a total of £63,000,000. With an estimated profit of £32,000,000 there would be a deficit of £31,000,000 ($124,000,000) if the miners' demands were acceeded to.

The stand taken by the miners is most arrogant and egotistical. They are attempting to dictate to the government as the railwaymen never did. History records the fate of the railwaymen and the character of the Britisher has not altered during the past year. The government has taken a firm stand and the people are behind it. Eleventh hour concessions are expected from the miners. Meanwhile extensive preparations are being made by the government to combat the effects of the strike. The nation is promised even better emergency service than obtained last year during the railway strike.

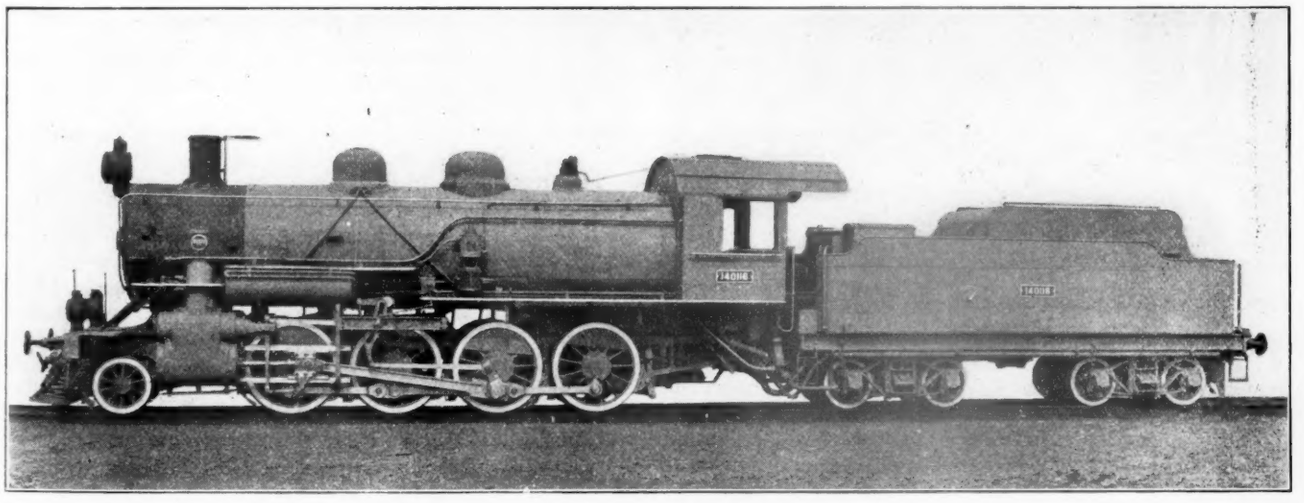


Long Lines of Disabled Locomotives Await Repairs in the Balkan States

Locomotives Recently Exported to Roumania

Some Interesting Details in Regard to the Locomotives That Are Being Traded for Oil

A FEW MONTHS AGO, Samuel M. Vauclain, president of the Baldwin Locomotive Works, visited Bucharest and closed a contract with the Roumanian Government for 50 locomotives. It was an unusual contract for the reason that the locomotive builders agreed to accept oil in payment for the locomotives and the transaction has been widely commented on as an exposition of unusual initiative in the development of foreign trade. The contract for these locomotives was signed on April 5 and on August 22 the Baldwin Locomotive Works completed shipment of 25 of these locomotives. The other half of this order was assigned to the American Locomotive Company. This portion of the order is now being completed at the Montreal plant of that company.



"Pershing" Type Locomotive for Roumania

The situation in Roumania at the time Mr. Vauclain visited the country has been described as desperate so far as motive power was concerned. There appeared to be an abundance of cars but it was estimated that at least 70 per cent of all the locomotives in Roumania were awaiting repairs and a majority of those running were unfit for service. It should be stated in this connection that in addition to arranging for the delivery of new locomotives the builders will co-operate with the Roumanian government in a survey of approximately 3,500 locomotives with a view to supplying the spare parts needed for the rehabilitation of these locomotives.

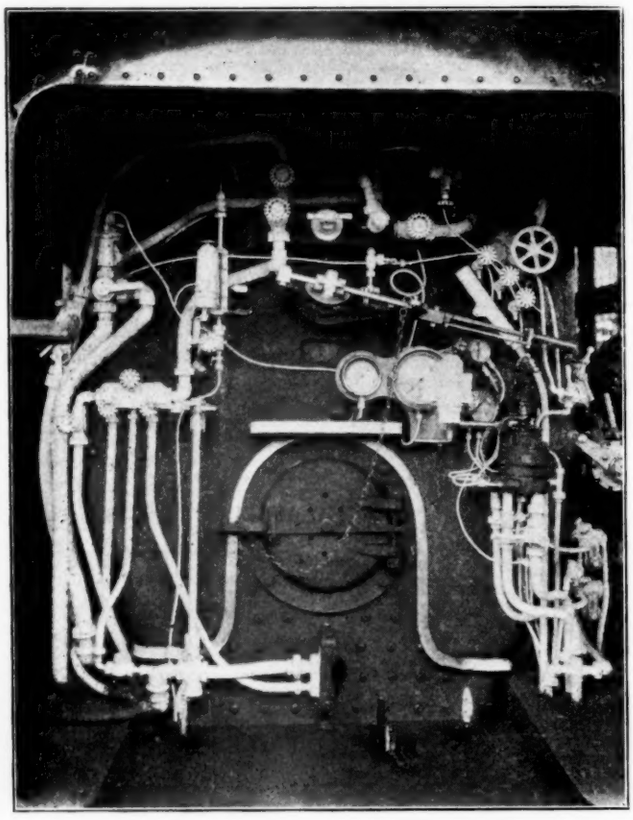
It was strongly realized that without locomotives, Roumania could not go forward. It was also appreciated that Roumania had no money and apparently no credit but that the country was rich in resources and that the people were honest and industrious. If means were provided to increase production, the country's debt could be reduced, but as mat-

ters stood it was useless to raise more grain, or produce more oil, or lumber, or salt, as it was impossible to move what was then being produced and in many cases it was spoiling, thus discouraging the producers. It was apparent that the Roumanians must not only find some way to repair their own locomotives, but that they would have to secure a few new locomotives to tide them over until the repairing of these locomotives could be accomplished.

Conditions Affecting Shipment

This is the situation that led to the acceptance of oil in exchange for locomotives. The oil is to be delivered at Constanza commencing at once and this form of payment will extend over a number of years. Constanza, their chief port on the Black Sea, is also the port through which the locomotives will be received.

There is sufficient depth of water at the Constanza docks to take care of ocean steamers but the unloading facilities



View Showing Combination Oil and Hand Firing Arrangements on Roumanian Locomotives

were carried away by the Bulgarians and are therefore inadequate for shipments of such weight. This fact was known and to overcome it a forty-ton crane was included in the first shipment which will be installed on the docks to unload the cargo.

Another difficulty in shipping by way of Constanza was the partial destruction by the Austrians and Bulgarians of the long bridge over the Danube at Cernovoda. Unless this bridge was rebuilt, it would have been impossible to get these locomotives into Roumania through one of their own sea ports and thereby permit the shipment of the immense stores to points of distribution from Transylvania, Bukovina and Bessarabia, now parts of new Roumania. It was, therefore, decided that the bridge would be rebuilt immediately and by the time the first locomotives are received, the bridge will be entirely reconstructed.

Details of Locomotives

All of the locomotives ordered on this contract are the Consolidation type, following the "Pershing" type of which large numbers were supplied to the American Expeditionary Forces by the same builders. All of the specialties on these engines such as lubricators, injectors, headlights and air brakes are of American manufacture.

The principal specifications for these locomotives are as follows:

Gage	4 ft. 8½ in.
Cylinders	21 in. by 28 in.
Valves	Piston
Boiler	
Type	Straight top
Diameter	70 in.
Working pressure	191.71 lbs.
Fuel	Lignite and oil
Firebox	
Material	Copper
Staying	Radial
Length	122½ in.
Width	37¾ in.
Tubes	
Diameter	2 in.
Material	Steel, copper ends
Number	165
Length	13 ft. 9⅛ in.
Flues	
Diameter	5⅜ in.
Number	26
Heating Surface	
Tubes	1,182 sq. ft.
Flues	500 sq. ft.
Firebox	180 sq. ft.
Total	1,862 sq. ft.
Wheels	
Driving, outside diameter	56 in.
Engine truck, diameter	33 in.
Wheel Base	
Driving	15 ft. 6 in.
Total engine	23 ft. 8 in.
Total engine and tender	57 ft. 4⅝ in.
Weight	
On driving wheels	148,400 lb.
On truck, front	18,700 lb.
Total engine	167,100 lb.
Total engine and tender	287,100 lb.
Tender	
Tank capacity	4,630 Imp. gal.
Fuel	4 metric tons and 1,320 Imp. gal.

Unusual Fuel Features

Five of the locomotives included in this shipment were equipped with oil burning apparatus for the exclusive use of oil as fuel, this being the first instance of the use of any American system of oil burning locomotives on the railways of Southeastern Europe.

The remainder of the locomotives will be equipped for burning a combination of native lignite and oil. This is not an unusual practice on Roumanian locomotives and the manner in which it is accomplished has been described as follows:

All the oil burners are attached to the back head and the jet enters the firebox about six inches below the fire door opening. Ordinary coal grates are used and for all Roumanian locomotives a drop plate must be used in front because the lignite clinkers badly at times, and the drop plate must be let down and the clinkers pushed out the front of the firebox into the ash pan. The drop plate is then pulled up again, live coals are spread over it, fresh lignite is thrown in, and the oil is sprayed over the top of it. The native lignite is very poor, being a reddish brown; comes in blocks or cakes resembling brown slate more than anything else, but it burns well under the influence of oil. The fireman has very little to do, except now and then to throw in 300 lb. or 400 lb. of lignite, burning it up before a new lot is put in, somewhat similar to the firing of anthracite coal.

THE FIRST-CLASS seating accommodation in English railway trains on December 31, 1919, represented 12.45 per cent of the total, while of the receipts from all passengers carried during 1919, 14.68 per cent came from first-class passengers.

Statistics Show Increased Efficiency

WASHINGTON, D. C.

CONSIDERABLE PROGRESS in the campaign to speed up the movement of freight cars and to increase the average tonnage of freight per car, in order to increase the efficiency of the available car supply, is shown in a table of operating statistics for July and the first seven months of 1920 made public by the Interstate Commerce Commission. The table covers 44 roads having annual revenues in excess of $25,000,000, of which 29 show increases in the average miles per car per day for July as compared with July, 1919, and 28 show increases for the seven months. Practically all roads show an increase in the average car load, ranging from one to five tons. The roads have conducted a campaign to induce shippers to load cars to capacity, saying that an addition of two tons in the amount of freight loaded in each car is equivalent to a saving of 150,000 cars. An increase of one mile in the average daily car movement is equivalent to an addition of 100,000 cars to the available supply.

The railroad executives at a meeting in New York on July 16 adopted resolutions pledging themselves to make

		Net ton-miles (millions)		Net ton-miles per loaded freight car-miles		Car-miles per car day		Net ton-miles per car day	
		1920	1919	1920	1919	1920	1919	1920	1919
NEW ENGLAND REGION:									
New York, New Haven & Hartford	July	296	319	24.6	23.0	12.7	14.4	221	249
	7 months	1,618	1,768	23.0	22.9	9.2	14.2	160	246
Boston & Albany	July	169	134	28.0	22.2	32.1	35.1	599	530
	7 months	921	747	24.4	21.4	25.3	31.6	439	480
Boston & Maine	July	372	307	24.9	23.2	19.3	17.8	342	290
	7 months	2,176	1,880	24.0	23.9	15.1	17.5	267	306
GREAT LAKES REGION:									
Delaware & Hudson	July	423	334	35.9	35.4	29.4	28.3	698	621
	7 months	2,506	1,981	34.8	35.5	26.7	24.9	638	575
Delaware, Lackawanna & Western	July	520	431	30.0	28.9	32.1	26.8	669	551
	7 months	2,851	2,857	28.7	30.0	26.1	26.4	537	548
Erie (including Chicago & Erie)	July	1,146	882	30.2	27.8	26.8	29.8	552	570
	7 months	6,592	5,718	29.5	28.6	22.9	29.8	487	565
Lehigh Valley	July	670	529	33.4	31.0	25.1	22.7	589	507
	7 months	3,502	3,137	31.2	30.0	19.0	22.1	425	454
Michigan Central	July	482	393	25.4	20.4	22.3	23.6	408	352
	7 months	2,785	2,431	24.3	20.8	17.5	26.1	326	379
New York Central	July	2,408	1,901	30.2	26.2	25.0	25.1	495	442
	7 months	13,450	11,577	27.7	25.9	21.0	23.4	398	393
Pere Marquette	July	260	204	27.7	24.1	16.4	16.5	356	295
	7 months	1,695	1,395	26.2	24.1	14.6	18.4	300	326
Pittsburgh & Lake Erie	July	198	210	44.1	42.3	6.7	9.0	210	257
	7 months	1,112	1,219	42.2	40.8	7.2	8.5	206	229
Wabash	July	465	366	25.7	23.0	26.6	27.7	521	465
	7 months	2,642	2,302	24.8	23.2	25.4	27.8	500	463
OHIO-INDIANA-ALLEGHENY REGION:									
Baltimore & Ohio	July	2,000	1,697	35.6	34.7	25.4	24.9	600	574
	7 months	11,904	9,244	33.8	33.3	24.1	22.1	559	469
Central of New Jersey	July	259	214	34.6	32.3	15.2	13.4	336	268
	7 months	1,452	1,321	34.1	33.1	13.2	12.7	286	259
Philadelphia & Reading	July	590	575	36.0	38.1	17.7	19.6	485	496
	7 months	3,976	3,454	37.9	37.7	19.0	18.2	494	450
POCAHONTAS REGION:									
Chesapeake & Ohio	July	1,096	1,001	41.9	40.7	37.2	27.8	944	693
	7 months	6,990	5,656	40.8	40.3	36.5	24.4	915	588
Norfolk & Western	July	1,087	988	42.0	40.6	38.1	31.4	1,006	807
	7 months	6,504	5,738	41.3	39.6	34.5	26.6	920	654
SOUTHERN REGION:									
Atlantic Coast Line	July	295	283	20.9	19.9	25.1	21.2	354	308
	7 months	2,321	2,187	21.0	21.6	22.6	21.1	325	304
Illinois Central (including Yazoo & Miss. Valley)	July	1,469	1,157	28.8	26.7	44.2	34.1	816	617
	7 months	9,864	7,376	28.5	26.7	40.2	30.4	787	560
Louisville & Nashville	July	847	834	28.8	28.0	34.9	29.0	646	576
	7 months	5,690	5,085	29.6	28.9	31.5	24.1	628	479
Seaboard Air Line	July	239	189	23.6	21.3	23.3	21.0	399	344
	7 months	1,717	1,380	22.7	21.2	21.4	20.2	349	310
Southern Railway	July	808	632	22.9	21.2	24.8	23.1	409	369
	7 months	5,616	3,946	23.2	22.2	22.9	19.6	397	317
NORTHWESTERN REGION:									
Chicago & North Western	July	1,079	951	27.3	25.6	22.8	21.2	414	364
	7 months	6,421	5,644	25.4	25.0	20.7	19.6	362	325
Chicago, Milwaukee & St. Paul	July	1,091	1,107	25.2	23.9	29.9	31.5	498	503
	7 months	7,567	7,051	25.3	24.9	23.2	25.8	423	449
Chicago, St. Paul, Minneapolis & Omaha	July	158	138	23.7	22.6	22.4	19.1	379	309
	7 months	1,069	907	23.7	23.6	21.7	18.9	391	303
Great Northern	July	836	888	31.2	29.1	28.3	31.3	582	560
	7 months	5,256	4,907	28.1	29.0	25.7	20.9	525	420
Minneapolis, St. Paul & Sault Ste. Marie	July	290	285	22.8	21.9	27.8	30.0	458	477
	7 months	2,075	1,785	23.2	22.5	26.0	21.9	470	364
Northern Pacific	July	655	661	26.9	25.7	33.1	29.4	625	502
	7 months	5,176	4,675	27.2	27.5	33.1	24.6	684	485
Oregon-Washington R. R. & Navigation Co.	July	176	145	28.4	26.0	35.7	27.9	752	500
	7 months	1,247	936	28.1	26.3	27.2	21.7	601	439
CENTRAL WESTERN REGION:									
Atchison, Topeka & Santa Fe	July	1,120	946	22.8	21.8	37.0	24.4	579	383
	7 months	7,412	6,118	22.9	22.2	30.8	25.4	492	396
Chicago & Alton	July	198	197	26.9	25.3	20.7	22.9	367	361
	7 months	1,306	1,206	26.6	26.2	20.8	22.3	369	365
Chicago, Rock Island & Pacific	July	783	685	24.2	23.3	26.4	27.7	458	452
	7 months	5,158	4,075	23.9	22.8	25.0	25.0	437	399
Chicago, Burlington & Quincy	July	1,328	1,145	28.7	26.5	32.0	27.7	605	473
	7 months	9,325	7,500	28.1	26.7	29.9	24.6	592	445
Denver & Rio Grande	July	191	160	29.9	29.3	20.8	14.7	445	290
	7 months	1,223	976	30.4	30.1	18.8	12.6	399	260
Union Pacific	July	816	699	23.9	23.1	81.7	54.7	1,319	834
	7 months	5,239	4,668	24.5	24.2	65.8	52.1	1,227	913
Oregon Short Line	July	287	251	29.8	27.1	52.6	32.2	1,064	584
	7 months	2,052	1,558	29.7	27.6	45.3	30.0	984	591
Southern Pacific	July	918	850	25.1	25.1	36.2	36.0	630	601
	7 months	5,757	5,286	25.3	26.0	34.3	31.6	618	567
SOUTHWESTERN REGION:									
Missouri, Kansas & Texas	July	212	180	22.9	22.1	30.7	22.2	425	313
	7 months	1,291	1,124	23.5	23.5	27.8	22.9	403	316
Missouri, Kansas & Texas of Texas	July	120	98	24.7	22.4	19.7	12.2	315	173
	7 months	766	684	24.0	23.4	16.5	12.2	258	174
Missouri Pacific	July	762	269	26.7	25.3	23.7	21.9	466	401
	7 months	5,213	4,081	26.7	25.2	22.3	20.0	447	366
St. Louis-San Francisco	July	429	395	26.5	24.4	21.9	18.6	382	312
	7 months	2,864	2,459	25.7	24.9	20.5	18.4	362	307
Texas & Pacific	July	177	145	23.4	22.3	30.2	18.2	492	284
	7 months	1,104	1,044	23.1	22.9	20.5	19.8	334	312

every effort to attain an average of 30 tons per car and 30 miles per car per day. The commission's report shows that for July, 12 of the large roads had exceeded this standard for car loading, while 9 had exceeded it for the seven months, and 15 roads had attained an average of over 30 miles per car day for July, while 9 had exceeded that average for seven months.

Varying conditions on different lines of course make comparisons between individual roads unfair, but it is interesting to note the improvement shown by most roads this year as compared with the period when they were under government operation.

The best car movement average is shown by the Union Pacific, which in July had an average of 81.7 miles per car day, as compared with 54.7 in July, 1919. For the seven months its average was 65.8 as compared with 52.1. The general average for all roads for July was about 26 miles.

Some of the larger increases for July are as follows: Delaware, Lackawanna & Western, 26.8 to 32.1; Chesapeake & Ohio from 27.8 to 38.1; Illinois Central, 34.1 to 44.2; Atchison, Topeka & Santa Fe, 24.4 to 37; Oregon Short Line, 32.2 to 52.6; Texas & Pacific, 18.2 to 30.2. The Oregon Short Line increased its seven months' average from 30 in 1919 to 45.3 in 1920. Other roads that exceeded an average of 30 miles for July were the Boston & Albany, Louisville & Nashville, Soo, Oregon-Washington, Burlington, Southern Pacific and Missouri, Kansas & Texas.

Some considerable increases are also shown in the average loading per car. The roads which exceeded 30 tons for July were the Delaware & Hudson, Delaware, Lackawanna & Western, Erie, Lehigh Valley, New York Central, Pittsburgh & Lake Erie, Baltimore & Ohio, Central of New Jersey, Philadelphia & Reading, Chesapeake & Ohio, Norfolk & Western, Great Northern, and Denver & Rio Grande.

The commission's figures for net ton-miles, average carload, miles per car day and net ton-miles per car day are given on the preceding page.

Locomotives for China

THE FOLLOWING analysis of the market for locomotives on the railways of China is an editorial which appeared in the August 20 issue of the Engineer of London. American readers may not agree with the comments made concerning locomotives of American design, but they will no doubt be interested in seeing how this important British engineering publication regards our competition in the Chinese market.

An abstract of the editorial from the Engineer follows:

There is every probability that for many years to come China will require great quantities of railway material of all kinds. That British makers hope to enjoy the lion's share of the trade goes without saying. At the present moment they are fully engaged on orders for home, European, and Indian markets. But today's pressure will not last for ever. In a few years the arrears will have been overtaken and British manufacturers will be scouring the world for orders. They must keep an eye on the leaner years ahead of them. The future never looks after itself. It cannot be left to chance. It is only by making provision now, at the present moment, that one can avoid disappointments hereafter. It is necessary to say this, and to say it forcibly, for we have received within the last few days convincing proofs that British engineers engaged in the manufacture of railway materials, and particularly of locomotives and signaling plant, are not making all the exertions in China that are needed. A short time ago a conference of Chinese railwaymen was convened to consider the standardization of certain parts of locomotives. Representatives of British and American firms were present. The Americans showed by their zeal and the thoroughness with which they had "gotten up" their subjects that they were very dangerous competitors. They left no stone unturned to make themselves conversant with the influence of the conference nor to get into touch with the engineers and commercial people connected with the railways. It is probable that the British representatives know more about work for Chinese railways and the railways of China than the American representatives, but in the face of such active competition the straining of every nerve is demanded.

There is a feature about locomotives for China that is disturbing. There is no engine made by British engineers which is constructed with greater care than the locomotive. Our makers rejoice in having every part of the very best, in imparting a high degree of finish, and in assuring themselves by steaming tests that all the organs are in proper adjustment. The Americans, as is well known, are not nearly so particular. They consider our degree of finish an expensive luxury; they are content to use material that we object to using—cast iron wheel centres and steel fire-boxes, for two examples—they do not take the same care with their adjustments, and in many cases, we believe, give, if they give at all, a very perfunctory steaming trial. It is common knowledge that, by contrast with British locomotives, American engines are crude and unfinished. We should be very sorry indeed to see any lowering of the British standard of excellence, for we are convinced that good mechanical engineering not only pays in the long run, but by encouraging a higher sense develops the engineers, mechanics, and artisans of the country in the right direction. But how we are to maintain the same standards of workmanship and the same excellence of material and yet compete with the Americans is a problem for the British manufacturer. It could be done fairly well in the old days, when the output per man was greater than it is now and the wages far less. But that advantage has practically disappeared, and America is prepared to offer locomotives to Chinese railways for less money than we. It is, we are assured, no use to tell the Chinese director that the British product is a great deal the better of the two, that it may go into service at once, that repairs and modifications will not be necessary for a long time, and that it will still be serviceable long after the American engine has been replaced. He does not care. The American engine is cheaper and that is all that matters to him. The cost of modifications, renewals, and repairs will come into another account. The capital cost is his concern, and the British engines are too dear. Here, as we have said, is a very serious problem for the British manufacturer. How can he so cheapen the production of the locomotive that, whilst still maintaining the excellence to which he has been brought up, he can compete with the cheaper and rougher American product? If it be impossible then he must consider which of the refinements he now puts into his work he can surrender without jeopardizing its merits.

We shall be deeply grieved indeed if the magnificent reputation which has always been enjoyed by British locomotives abroad has to be sacrificed to meet price competition in an open market. But we see all too clearly that that is not an improbable result of the present high cost of labor. When £2 ($10) a week of 50 hours represented about the average wage for mechanics refinements were not very costly. With wages standing where they do now, at least twice what they were before the war and with hours reduced to 48, refinements have become expensive, and we may find concerns absolutely forced to abandon them. We may be constrained to follow the American example and turn out engines finished in no respect as carefully as of yore. But even then, let not the British manufacturer, be he one of the old and famous firms or one of the new firms, imagine that orders for railway material in China will flow in without trouble. He has to meet there very active, very intelligent, very astute competition.

Meeting of Telegraph and Telephone Division

Message Traffic, Pole Lines and Inductive Interference Have Important Bearing on Efficiency

ONE OF THE BEST attended and most important meetings which the Telegraph and Telephone division, Section I—Operating, of the American Railroad Association, has ever held convened at the Fort Garry hotel, Winnipeg, Manitoba, on September 22, 23 and 24, with Chairman J. F. Caskey (Lehigh Valley) in the chair. About 225 members and guests were present. After the opening business and the report of the Committee of Direction (given in the *Railway Age* of September 24, page 535) the different committee reports were presented for consideration. During the various sessions, the members were addressed by Charles Gray, mayor of Winnipeg; A. E. Stevens, general superintendent, Canadian Pacific, and S. O. Scott, general passenger agent of the Canadian Government Railways.

Following the Committee of Direction's report, the special committee on Future Activities presented the results of its deliberations and recommendations, formulated at a meeting held on June 11, 1920. This committee recommended the appointment of a special committee to consider the question of technical training in the art of communication for employees entering the railroad field and to consider methods to induce young persons to enter the service and the opportunity afforded them to qualify in the several branches; careful study also being given to guard against the threatened depletion of aspirants.

It was suggested that a special committee to study the development of radio service and to determine whether it may be adapted to railroad work.

Construction and Maintenance of Outside Plant

G. A. Cellar (Pennsylvania System), chairman of the committee, presented a resume of the work done by the four sub-committees. Referring to the report of Sub-Committee A—Construction and Maintenance of Pole Lines—attention was called to the changed conditions, brought about by advanced methods of operation and by property congestion, which make necessary a higher quality of insulation and a re-arrangement of line form, involving the use of a greater proportion of cables and a lesser use of separate wires than has heretofore been standard practice. The rapidly diminishing supply of wooden poles indicates early resort to artificial poles or structures. This will add to the already high cost of construction with wooden poles. All of these reasons emphasize the necessity of minimizing the number of poles or structures, wherever possible consistent with the tensile strength of wires and the known storm stresses to which the line is exposed and point to the very considerable and laborious new work to be undertaken by this sub-committee.

E. C. Keenan (N. Y. C.), chairman of the sub-committee submitted for discussion, basic rules and pole tables for the construction and maintenance of wooden pole lines along railroads for telegraph and telephone service. The basic rules presented are:

(1) For Construction or Reconstruction: Wooden pole lines shall be designed so that the poles shall be of sufficient strength to carry the ultimate number of wires to be located upon them.

(2) For Maintenance or Renewals: Wooden pole lines shall be so maintained that the poles shall be replaced when the pole circumference is reduced to the figures given in the replacement tables.

(3) In arriving at the proper assumed loading, the experience of the railroad concerned, weather bureau wind velocity records, local records of ice coating, direction of the line, direction of prevailing winds, shelter, and such other features of protection as may be found to exist shall be considered.

Five tables were presented giving classes and numbers of new wooden poles required per mile for the construction or reconstruction of pole lines under various wind loads and five different loading assumptions based on 8 lb. (72 mi. velocity); 6 lb. (61½ mi. velocity); 5 lb. (55 mi. velocity); 4 lb. (49 mi. velocity) and 2 lb. (33½ mi. velocity) wind with a ½ in. coating of ice occurring on the wires simultaneously or for an equivalent loading. A replacement table for the maintenance and renewal of wooden poles carrying 10 wires located in territory where records and experience show that an 8 lb. wind and a ½ in. coating of ice occurs on wires simultaneously was presented or an equivalent loading was also given.

This table indicates the ground line circumference below which deterioration should not be permitted. It was recommended in the report that no line be built with less than 30 poles per mile, and where No. 9 A.W.G. copper wire is to be carried in sleet territory, the minimum should be 41 poles per mile.

In the discussion, attention was called to the fact that actual and indicated wind velocities were different and that it would be advisable to add a note to that effect. The effect of different climates and soils on various kinds of timber was discussed and called to the attention of the committee. Consideration was given to the use of creosote as a preservative for increasing pole line life and the development and use of the concrete pole to replace the present wood pole line was discussed to some extent.

Sub-Committee "B" Wire Crossings, H. J. Shepard (N. Y., N. H. & H.), chairman, reported on the Bureau of Standards revised rules for signal line (telegraph, telephone and other similar wires) crossing over railroads. The sub-committee had objected to certain proposed changes in the National Electrical Safety Code rules on the basis that they were inadequate to protect the public and railroad service. It was the feeling that if the Bureau of Standards should issue the revised code without accepting many of the important changes recommended by the Telegraph & Telephone division it would be necessary for the division to get up specifications based upon what is considered the proper fundamental engineering principles generally applied in railroad work. The report on this subject was presented as information.

During the discussion it was the feeling of the division that it should endeavor to comply, insofar as practicable, with the specifications of the Bureau of Standards and the Canadian Commission.

Particular attention was also called to the fact that the important point in the Safety Code is to determine what is the degree of hazard at the particular point of construction. It was pointed out that under the proposed ruling of the Bureau of Standards a wire line crossing with a lower factor of safety than was desirable could be constructed in certain cases across railroads of one to four tracks equipped with block signals, and this would be very objectionable.

The sub-committee also submitted a formulation of rules to cover the proper routine for handling wire crossing matters, as attention had been called to the fact that this routine was not uniform. On some railroads the telegraph department takes the initiative and has general charge, while on other

railroads the engineering department is in full charge and takes the initiative.

Thursday's Session

Committee No. 2—Construction and Maintenance, Inside Plant, R. F. Finley (N. Y. C., Lines West), chairman, submitted a specification for the installation of telegraph and telephone equipment in railroad offices. This specification is a revision of the preliminary draft submitted at the June and December, 1919, meetings. The specification is divided into six sections under the headings of: General; Planning; Locations and Layouts; Apparatus and Material; Circuits; and Installation. In addition drawings for test panels and terminal cabinets, circuits, patching cords, switchboards, wiring, methods of running wires to desks or tables and various construction and installation details were shown. It was moved and adopted that the specifications be accepted for submission to letter ballot for inclusion in the Manual.

Committee No. 4—Protection Against Lightning or Electric Light and Power Circuits, I. C. Forshee (Pennsylvania System), chairman, submitted revised specifications for telegraph and telephone line fuses and for telegraph and telephone office arresters for discussion. Additional specifications for telegraph and telephone cable arresters, telegraph and telephone instrument fuses and telegraph and telephone heat coils were prepared and also submitted for discussion. The committee also has in the course of preparation specification for telegraph and telephone protector mountings. The chairman stated that these specifications had been sent to twelve protector manufacturers by the general secretary and comments have been received from them. These comments have been given careful consideration in the revision of the specifications and subsequent meetings of the committee.

Some discussion occurred on the specification for telegraph and telephone office arresters with reference to a paragraph on electrical requirements as to whether the air gap should be used as a breakdown method of test or whether it should be stated that the arresters would operate on a certain voltage. The specifications presented to the meeting were accepted for discussion.

Committee No. 5—Telegraph and Telephone Developments, J. A. Jones (Southern, Lines East), chairman, submitted a report on new, useful and interesting developments in connection with the telegraph and telephone which was accepted as information. This report contained a brief discussion of new equipment and apparatus or developments that have been made recently in the science of telegraphy and telephony and included reference to sending machines; welding iron wire joints; emergency lamp; portable dry battery lamp; motor-generator bench; visual signal box; alternating current sounder; telephone operator's new receiver; the Potts simplex printer; automatic telegraphy; phantom wiring; telephone repeaters; audion bulb; mechanical belt conveyors; submarine cable telegraphy; non-insulated conductors, and inductive interference. E. C. Keenan, general superintendent telegraph, New York Central, described the experiments with wired-wireless which had been conducted by the United States signal corps in co-operation with the Pennsylvania, the New York Central, the Boston & Albany and the New York, New Haven & Hartford, over a distance of 110 miles by means of a pair of No. 9 copper wires used for long distance telephone circuits and two composite telegraph circuits. The transmission was excellent and the tests showed the practicability of these circuits. The tests were conducted over open wiring, there being but little cable in the circuit.

Committee No. 6—Message Traffic—H. Hulatt (Grand Trunk), chairman, submitted reports recommended practices for handling of traingrams; numbering of messages; message classification; dictating, transcribing and filing time; and rules covering the use and adjustment of semi-automatic sending keys. P. F. Frenzer, superintendent telegraph, Union Pacific, stated that this system has been put into effect with decided improvement over older methods of handling messages, the messages being marked preferred, day or night as necessary, the preferred messages being sent first, these being followed by day and night messages. The sender indicates the service desired. A check is made and the message is sent afterward and if it is found that messages are being marked "preferred" or "day" when some other classification should be used, corrective action will be taken.

Committee No. 7—Inductive Interference, E. L. King, (S. P.) chairman, was assigned three subjects: (1) A study of inductive interference on telegraph and telephone circuits as caused by power circuits. (2) Description of causes and effects of inductive interference. (3) Recommended rules for the construction and operation of power and communication lines for the prevention or mitigation of inductive interference. Under the first subject the committee submitted for discussion the theory of inductive interference, which was accepted for submission to letter ballot for inclusion in the Manual. Under the second subject, the committee presented a description of causes and effects of inductive interference which was accepted for submission to letter ballot for inclusion in the Manual. Under the third subject, recommended rules were presented which were also accepted for submission to letter ballot for inclusion in the Manual. During the discussion a motion was made and carried that Committee No. 7 prepare a summary based upon the report presented at the meeting giving concise statements of the reasons for objecting to supply lines located close to telegraph and telephone lines along railroad rights-of-way from a telegraph and telephone standpoint.

Officers Elected

The officers of the division chosen for the ensuing year are as follows: Chairman, H. Hulatt (Grand Trunk); first vice-chairman, W. H. Hall (M. K. & T.); second vice-chairman, E. L. King (Southern Pacific). The six members elected to the Committee of Direction were: G. A. Cellar (Pennsylvania System); E. A. Chenery (Mo. Pac.); E. E. Dildine (Nor. Pac.); G. D. Hood (C. R. I. & P.); J. McMillan (C. P. R.); C. S. Rhoads (C. C C. & St. L.). The nominees for the Committee on Nomination elected consisted of: H. C. Chace (A., T. & S. F.); P. F. Frenzer (Union Pacific); J. A. Jones (Southern); J. McMillan (C. P. R.); and J. C. Rankine, (Great Northern).

T. & T. Appliance Association

Officers of the Railway Telegraph and Telephone Appliance Association were elected for the ensuing year at the Fort Garry Hotel on September 23. The officers are: chairman, W. T. Kyle (Page Steel & Wire Company); vice-chairman, J. Warren Young (Kerite Insulated Wire & Cable Company); secretary and treasurer, G. A. Nelson (Waterbury Battery Company). The members elected to the executive committee were: B A.. Kaiser (American Telephone & Telegraph Company); E. E. Hudson (Waterbury Battery Company); A. D. Smith (Northern Electric Company, Ltd.); Wallace L. Cook (Reliable Electric Company); G. K. Heyer (Western Electric Company); F. W. Bayles (New York Telephone Company).

THE PLUMB PLAN is well calculated to appeal to the superficial reasoning of the half-informed or those who are perfectly sincere in their ignorance of the simplest and most elementary knowledge of economics and political science. It also appeals to their cupidity, for it comes near the human weakness of getting something for nothing, especially with little responsibility attached thereto.—*N. Y. Journal of Commerce.*

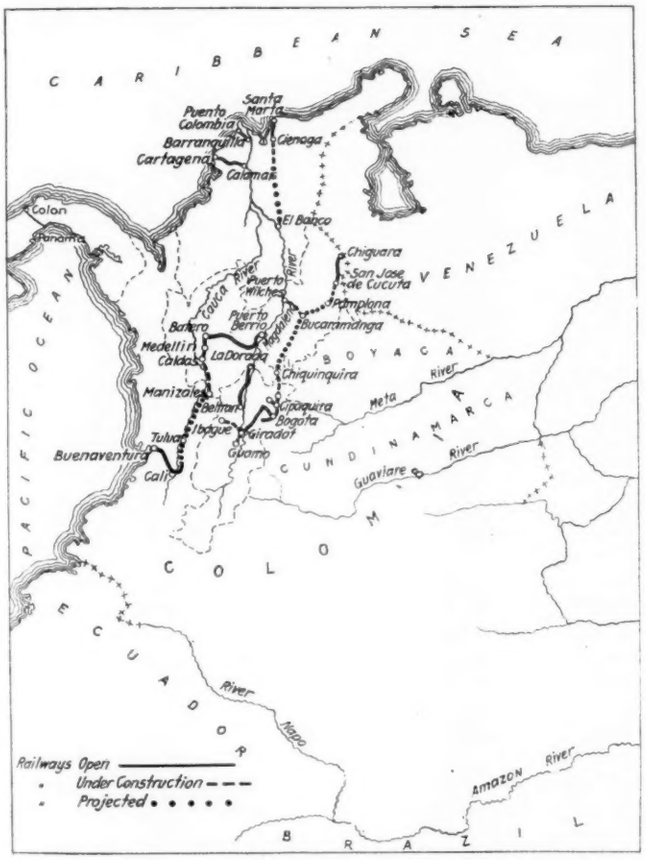
South America Invites American Rail Construction

Fifth Article by South American Correspondent Quotes a Suggestion as to Lines in Colombia

By John P. Risque

THERE DWELLS in the imagination of some of our countrymen a "bogie." They call it "Latin-American prejudice" and delight in applying this expression to all of South America in reference to an alleged unfriendliness to the Yankee and his products. Some there are who, in order to gain a point of some kind, will set about to demolish this bogie in long dissertations founded mostly upon ancient history.

Colombia has been accused, perhaps more frequently than any of the other countries, of harboring a grudge against us.



The Present and Proposed Railways of Colombia

There was, possibly, a keen sense of Colombian disappointment at one time, growing out of the Panama canal issue, but the alleged sentiment against us on that score does not seem to be apparent in the mind of the representative Colombian of 1920. Such a prejudice may exist in some quarters, but, if it does, it is conceded, by those who are informed on the subject, to be inspired by unfriendly competitors in a market in which we have long exhibited, until recently, little more than a casual interest.

The following letter, written by a resident of Manizales, one of Colombia's important commercial cities, can be said to be typical of Colombia's frame of mind toward the American. Despite its inviting friendliness, it contains, between the lines, a hint of our apathy towards the greatest need of this republic—new railway lines to contend with its growing trade. Manizales, lying in what is known as the Caldas section, is the most southernmost town in the province of Antioquia. The eastern boundary of this province is formed by the celebrated Magdalena river, which stream is the country's north and south artery of traffic between the port of Barranquilla, at the mouth of the river on the north coast, and Bogota, the chief city and capital of the republic, 500 miles south. The letter is as follows:

Mr. John P. Risque: Manizales, Colombia.

Aware of the interest taken by your paper in general railway progress, combined with the fact that American capital is said to be interested in the construction of new railways in the various countries of South America, I am taking the liberty of writing you with respect to the railway situation in my own country.

Although Colombia has about 480,000 sq. m. of area and more than 6,000,000 inhabitants, it has only 738 miles of railways. Its storehouse of coffee, sugar cane, tobacco, cocoa, rice, corn and other numerous products of the soil, is immense. It is capable of increasing its exports of meats tenfold. The richness of its mineral deposits is well known and its latest probable contribution to the wealth of the world is claiming the attention of petroleum interests.

It is more or less generally known that Colombia's exports and imports have managed with some difficulty to find their way into and out of the country via the Magdalena river, a semi-navigable stream which practically bisects the country from Barranquilla to Bogota. This river, for lack of sufficient water, frequently twice in a summer and occasionally at other unexpected times, has to be aided in its traffic by short railway lines to convey freight up and down in spots where the water is at no time of sufficient depth to float the shallow draft steamers used. The transportation of freight by means of this route is obviously slow, expensive and extremely unreliable. To those who are basing their hopes of a solution of our transportation problem on the final completion of the Pacifico line from Buenaventura to interior points, thereby providing a rail outlet for Colombia's interior to the Pacific ocean, I would point out that we believe that our front door should be in the front of the house, not at the back. In a commercial and economic sense, with relation to trade with North America, our front door should open to the Atlantic ocean, since we seek trade with the ports of the United States via the shortest route.

Via the Pacific outlet referred to, traffic will be subjected to the relatively increased delays of the Panama canal, its taxes, and, in times of war, probable interruption.

Colombians believe that the most important lines for their country would constitute a road similar to what the Chileans call their longitudinal; a north and south line starting at Barranquilla or Cartagena on the north coast and following the Magdalena river south to join the Giradot Railway near Bogota. Tributary to it, and, as short feeders, should be constructed various branch lines from important districts on either side of this 748 miles north and south trunk line. It is understood that the larger part of the construction of such a project would be comparatively easy, as it would traverse a great deal of level country. A branch line of importance would be one to Cucuta, passing through Bucaramanga. It would cross two of our richest coffee-producing provinces, whose products, under present handicaps, must find their outlet to the Gulf of Maracaibo via Venezuela which imposes the usual taxes for the privilege. The completion of the 156 miles of the Pacifico line between Buenaventura and Bogota not yet completed will also tap a rich province and the Pacifico is expected to connect eventually with the Antioquia and the Caldas lines projected by the government.

For the benefit of those who are not posted on the subject, I

would point out that with the exception of the Dorada, Calamar and Puerto Colombia, three short lines owned by British capital, whose combined lengths do not exceed 187 miles, all of Colombia's railways are built and operated by the government.

The government of Colombia, convinced that the country's progress is measured by her ability to transport freely in all directions, and particularly between the interior and the mutually desirable front door to America, referred to, invites propositions from your countrymen, leading to the realization of her greatest needs—the construction of new railways. Colombia is ready to give careful consideration to the plans of those who are interested and offers guarantees and facilities for the safeguarding of the investments of those who mean business.

GUILLERMO GUTIERREX VÉLEZ.

Freight congestion in the Caldas section is somewhat relieved by a partly finished aero-trolley line, an elevated endless cable system between the town of Manizales and the line of the Dorada Railroad, thus giving the latter town and its surrounding section a somewhat restricted outlet to the Magdalena river.

Other lines now under operation in Colombia include: a 45-mile line from Cucuta (the coffee district referred to above) and the Venezuelan frontier; an 18-mile line between Barranquilla and Puerto Colombia; 57 miles of line between the provinces of Cundinamarca and Boyaca; the Sabana Railway of 25 miles; the 82-mile Giradot line between Bogota and Giradot; the Tolima Railway of 27 miles between Giradot and Ibague; the Pacifico with 135 miles from Buenaventura to Cali; the Dorada line of 69 miles from the river port of that name and Beltran, connecting the two water levels of the Magdalena river; the Antioquia Railroad from the river port of Berrio to Medellin, 108 miles distant; a line of 13 miles under construction from Bucaramanga to Puerto Wilches and known by the latter name; the Cartagena Railway 65 miles from the port of that name to the river port of Calamar; the Amaga Railway 26 miles in length in the Antioquia section; and the Caldas Railway, 9 miles under construction from Port Caldas along the Cauca river to Manizales.

Supplemental Increase in Express Rates

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION on September 24 announced its decision on the supplemental application of the American Railway Express Company for further increase in express rates to meet the increases in wages recently allowed by the Railroad Labor Board. The company's proposal for an additional increase of 15 per cent in class and commodity rates is found by the commission not to have been justified, but it allows an additional increase of 13½ per cent to the rates in effect at the date of its preceding decision, in which an increase of 12½ per cent was allowed, making a total increase of 26 per cent, with the exception that rates on milk and cream are limited to those contemporaneously applied by the railroad lines between the same points. The company will be permitted to make the increased rates effective upon not less than one day's notice. The company in its supplemental petition filed August 19 estimated that the wage increases, together with those incident thereto and those resulting from increased working forces, would aggregate $44,258,903 a year. This estimate was later revised to $42,296,340. The opinion by Chairman Clark of the Commission says in part:

"An exhibit, based upon an increase of 15 per cent in rates, a corresponding increase in commissions and in taxes on gross transportation revenues or such revenues less express privileges only, and the computed wage increases, shows a remainder of $2,212,339 as available to meet such other increased expenses as incidental increases to draymen and railroad baggagemen and increased payments under state compensation laws to injured employees. The ultimate results can be more nearly approximated by recasting the 1919 items of revenue and operating expenses, tabulated in our preceding report and showing an operating deficit of $21,819,488, on the basis of a total increase of 27.5 per cent.

"So computed, the gross transportation revenues, domestic and miscellaneous, plus the 1919 valuation charges, would be $369,716,288, or an increase of $78,619,170. The offsetting items of expense, exclusive of express privileges, would be $161,055,177, covering the 1919 operating expenses other than commissions, in turn including the retroactive application of the basic wage scale in effect at the close of that year, together with the estimated cost of apportioning the revenues accruing to the railroads; the estimated wage increase, $42,296,340; uncollectible revenue, $45,055; taxes other than on earnings, $905,170, and 127.5 per cent of the 1919 commissions, $15,384,446, and taxes on earnings other than net, $1,415,326. The total of these items is $221,101,513. The difference between this sum and the gross revenue would be $148,614,775. A further deduction of the 1919 express privileges, $143,429,820, for the purpose of the present calculation, would leave $5,184,955. While this result assumes no increase in expenses from other sources, it also takes no account of such gains as may be made by lessening the loss and damage account or of such additional revenues as may accrue from the proposed classification changes now pending in No. 11416, Express Classification, 1920.

"The concrete figures for 1920 might afford a more satisfactory basis for computing the results of the proposed rate increase were it not for the fact that the items of expense are not separated into those that would and those that would not be proportionately affected. While the indicated higher ratio of expenses to revenues in 1920 than in 1919 might suggest some reduction in the net revenue hereinbefore computed on the basis of the 1919 operations, there is no explanation of record for the attendance of an ascending percentage of cost upon materially increased business and revenues.

"Again recasting the 1919 operations, but upon the basis of a total increase of 26 per cent in the rates, in the manner before outlined, the results would be $365,427,970 in gross revenues and $220,903,869 in total operating expenses, exclusive of express privileges. Deducting from the difference between these amounts the 1919 express privileges, the net remainder would be $1,094,281. As before indicated, this would take no account of prospective further revenues from the pending classification changes, some of which have been agreed to by interested shippers and others of which have not been contested. As already suggested, also, there is, or ought to be, a fair opportunity for a material abatement of the loss and damage account and a corresponding augmentation of revenues, and there is a reasonable right of shippers to expect such a result, with gradually improving conditions as the disorganizing period of the war recedes. With the increases in wages there should follow an enhancement of the morale of respondent's working forces that ought in all reason to manifest itself in a more zealous care of the property of patrons of the service in transit and at terminals. No less certainly, with the very substantial increases in express rates, shippers have a right to demand an improved and steadily improving service; and the obligation on respondent's part will not be discharged by mere compensation for loss or damage, but primarily by prompt and otherwise satisfactory deliveries. On our part, while at all times ready to accord to a common carrier that relief to which it may be justly entitled, we shall not view with complacency anything other than a painstaking and unremitting effort to reduce the item of loss and damage to the lowest possible figure."

Freight Car Loadings Show Temporary Reductions

Figures for Week Ended September 11 Total 872,043; But Include Labor Day Holiday

WASHINGTON, D. C.

WHILE THE FREIGHT CAR loadings for the first week in September, as reported to the Car Service Division of the American Railroad Association, showed a falling off as compared with the high figure attained in the last week of August, the report for the week ending September 11 indicates that the reduction was a temporary one. For the week ending September 11 the total revenue freight loaded was 872,043 cars, as compared with 946,970 in 1919 and 974,269 in 1918, but the week ending September 11 this year included the Labor Day holiday. For the weeks in 1919 which included Labor Day the total loadings were 874,856 and 868,828, respectively, which indicates that the traffic this year is still holding its own.

For the month of August the loadings were greater than for August in 1919 or 1918, and August, 1918, was a heavier month than August, 1917. For the week ending August 28 the total loading was 985,000, which set a new record for this year and nearly reached the highest record ever attained. For the week ending September 4 the total was 947,743.

The considerable reduction seemed to afford some confirmation of the predictions made in some quarters that the increase in freight rates would tend to reduce traffic, but a possible explanation is that there was a special effort on the part of shippers to get as much freight as possible started before the increased rates went into effect on August 26, which caused the large increase in loading during the last week of August, and that there may have been a period of hesitancy during the first week they were in effect. There has also been reported a tendency toward slowing up in several lines of business, which is attributed to other factors than rates, but the fact that the loading during Labor Day week was almost the same as for the Labor Day weeks of 1919 and 1918 does not indicate much interruption of the increase in the volume of traffic. Whereas so far this year the volume of traffic has greatly exceeded that of 1919, from now on comparisons will be made with that part of 1919 when the freight business was heavier even than in the war years 1918 and 1917. There were three weeks in 1919 in which over 1,000,000 cars a week were loaded. The summary for the week of September 11 follows:

The freight congestion has been practically cleared up, as switching service has been restored to a normal condition by the return of yardmen to the service, according to the reports of the Car Service Division of the American Railroad Association. For the week ending September 17 the accumulations of freight cars on hand in excess of current movement had been reduced to 47,438. This included 22,000 cars held awaiting export or coastwise movement. In times of heavy traffic an accumulation of 30,000 to 40,000 cars is regarded as normal. On April 16, after two weeks of the strike, there was an accumulation of 288,000 delayed cars.

Deferred Car Requisitions

The deferred car requisitions (car shortage) for the week ending September 8 averaged 104,790 for the United States and 110,750 for the United States and Canada, of which 64,000 were for box cars and 28,000 for coal cars. For the preceding week the total for the United States was 146,070 but an investigation developed that some roads were reporting the accumulated weekly figures instead of the daily average and the marked decrease is accounted for in part by the resulting corrections.

Reports of Local Committees

The weekly reports of the local car service committees show practically normal conditions in almost all parts of the country. From some places light business is reported but, generally speaking, the demand for equipment continues to increase. While the switching forces have been restored to practically normal numbers, there is a widespread shortage of car repair men, which is delaying the campaign to reduce the percentage of bad order cars.

The Chicago committee reports that since the termination of the switchmen's strike the yard forces are practically normal on all lines on account of the old men returning to work, but the car repair forces are only about 70 per cent of normal and freight house labor is 10 per cent below normal.

Most of the committees report a very low railroad fuel supply and in a good many instances railroads have been

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS FOR WEEK ENDED SATURDAY, SEPTEMBER 11, 1920

SUMMARY—ALL DISTRICTS; COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO

District	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L. C. L.	Miscellaneous	Total revenue freight loaded: This year 1920	Total revenue freight loaded: Corresponding year 1919	Total revenue freight loaded: Corresponding year 1918	Received from connections: This year 1920	Received from connections: Corresponding year 1919	Received from connections: Corresponding year 1918
Eastern	1920	7,211	2,656	36,201	3,584	7,330	11,250	40,721	86,818	195,771	.....	.....	247,052	.....	.....
	1919	9,708	3,014	47,463	3,363	7,751	6,808	21,263	131,993	.....	231,363	229,562	.....	250,374	254,944
Allegheny	1920	2,971	3,272	53,741	6,504	3,862	12,001	35,449	69,352	187,152	.....	.....	138,398	.....	.....
	1919	3,675	3,862	60,470	4,398	4,497	12,923	38,454	79,324	.....	207,603	225,364	.....	150,114	186,828
Pocahontas	1920	169	205	22,710	781	1,941	215	2,525	6,698	35,244	.....	.....	19,053	.....	.....
	1919	254	468	23,971	640	2,265	306	122	9,629	.....	37,655	40,642	.....	19,840	23,740
Southern	1920	3,900	2,150	26,639	1,486	17,727	2,781	32,111	35,518	121,412	.....	.....	71,184	.....	.....
	1919	3,448	2,462	24,213	335	18,816	2,485	21,113	49,516	.....	122,388	123,717	.....	70,427	71,841
Northwestern	1920	13,121	7,411	9,856	1,598	15,310	43,229	24,452	40,460	155,437	.....	.....	57,725	.....	.....
	1919	14,212	9,136	8,804	1,157	16,082	41,352	21,257	48,758	.....	160,758	169,809	.....	62,455	77,073
Central Western	1920	10,048	9,649	20,080	400	5,550	2,894	28,256	37,933	114,810	.....	.....	69,114	.....	.....
	1919	12,191	12,317	21,249	344	5,235	3,556	23,815	44,372	.....	123,079	125,454	.....	68,672	66,309
Southwestern	1920	4,163	2,591	5,614	118	7,912	357	16,900	24,562	62,217	.....	.....	49,953	.....	.....
	1919	5,441	2,964	7,394	153	8,056	360	12,712	27,944	.....	64,124	59,721	.....	50,455	48,491
Total all roads	1920	40,683	27,934	174,841	14,471	59,632	72,727	180,414	301,341	872,043	.....	.....	652,479	.....	.....
	1919	48,929	34,223	193,564	10,390	62,702	67,790	138,736	390,636	.....	946,970	.....	.....	672,337	.....
	1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	974,269	.....	.....	729,226
Increase compared	1919	.....	.....	.....	4,081	.....	4,937	41,678	.....	.....	.....	.....	.....	.....	.....
Decrease compared	1919	8,246	6,289	18,723	.....	3,070	.....	.....	89,295	74,927	.....	.....	19,858	.....	.....
Increase compared	1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Decrease compared	1918	.....	.....	.....	.....	.....	.....	.....	.....	102,226	.....	.....	56,889	.....	.....

obliged to confiscate commercial coal. A number of the reports show only from 1 to 4 days' supply of fuel on hand.

I. C. C. Operating Statistics for June

The Interstate Commerce Commission has issued a summary of operating statistics for June and the six months ending with June, covering the large steam roads, showing that the railroads in the first six months of this year handled 207,281,000,000 net ton miles of revenue and non-revenue freight, an increase of 17.3 per cent over 1919. The tons per train showed an increase from 700 to 710 and the tons per loaded car from 27.9 to 28.4. The percentage of serviceable cars to the total cars on line was 93.3 as compared with 93.4 in 1919. The average miles per car day had increased from 21.3 to 22.7.

The commission's summary also includes the cost per freight train mile for selected accounts, totalling $1.84 for this year as compared with $1.65 in 1919. The cost of locomotive repairs per freight train mile had increased from 44 cents to 47 cents, enginemen from 22.7 to 26.9 cents, fuel from 50 to 57.4 cents, other locomotive and train supplies from 11.1 to 11.5 cents, trainmen from 26.2 to 30.7 cents, while enginehouse expenses had decreased from 11.3 to 11.1 cents. The cost per passenger train mile for selected accounts had increased from 89.8 to 98.8 cents. The cost of coal per net ton had increased from $3.35 to $3.74.

For the month of June the ton miles showed an increase of 18.4 per cent. The miles per car per day had increased from 23.1 to 25.0, the tons per loaded car from 27.8 to 29.1, and the percentage of serviceable cars from 92 to 93.

New Monthly Bulletin of Car Performance

The Bureau of Railway Economics has begun the publication of a monthly bulletin of freight car performance covering the Class I roads, which gives by roads and by regions the net ton miles, freight car miles, freight cars on line and the efficiency ratios of car miles per day, tons per car and per cent of unserviceable cars. A summary of the most significant factors for the first six months of this year with per cents for previous months and years is given in the following table:

MONTHLY SUMMARY, JANUARY, 1917, TO JUNE, 1920

	Car-miles per day				Tons per car (Revenue and non-revenue)				Percentage of unserviceable cars				Per cent loaded to total car-miles			
Month	1917	1918	1919	1920	1917	1918	1919	1920	1917	1918	1919	1920	1917	1918	1919	1920
January	25.3	18.3	21.4	22.8	26.4	29.6	29.0	28.3	5.6	5.1	6.0	6.6	70.1	70.0	66.2	70.9
February	23.9	22.0	20.3	22.3	26.1	28.4	27.7	28.3	5.5	5.2	5.6	6.5	71.5	70.9	67.5	72.0
March	25.6	24.9	20.4	23.8	26.4	28.1	27.6	28.3	5.4	5.0	5.6	7.0	70.8	71.4	68.1	72.3
April	27.4	25.9	21.6	19.4	25.6	29.4	27.3	28.6	5.8	5.1	6.4	6.5	71.6	68.0	68.1	68.3
May	29.0	26.4	22.8	24.2	26.7	27.7	27.7	28.3	5.6	5.4	7.3	6.6	70.1	66.8	67.4	71.2
June	28.4	26.8	23.0	25.0	27.8	28.3	27.5	29.0	5.6	5.9	8.1	7.0	68.7	66.8	67.9	69.5
July	28.3	26.5	24.1	...	27.1	30.1	27.8	...	6.0	6.9	8.7	...	67.9	64.7	68.0	...
August	27.1	26.0	24.2	...	27.9	30.1	28.0	...	6.0	6.6	9.2	...	68.7	67.6	70.4	...
September	26.6	26.8	26.5	...	27.0	29.7	28.5	...	5.8	6.2	8.5	...	70.0	66.9	69.6	...
October	26.3	26.2	27.3	...	27.7	29.7	28.0	...	5.6	6.0	7.4	...	71.5	67.9	68.4	...
November	26.2	24.6	23.3	...	27.2	29.5	26.2	...	5.2	5.6	6.3	...	71.0	67.1	71.3	...
December	21.3	22.8	22.3	...	29.2	29.8	27.7	...	5.2	5.8	6.2	...	70.9	65.9	71.1	...
Total	26.1	24.9	23.1	...	27.0	29.1	27.8	...	5.6	5.7	7.1	...	70.2	67.7	68.7	...

The bulletin for April says it is evident that April operations were affected by the strike, for the percentage of loaded car miles and the car miles per day were lower than in March. Car loading, however, was increased and the percentage of unserviceable cars was lowered below the March average. The average daily car mileage in May was the greatest since the month of October, 1919, and a further increase was shown in June. The average tons per loaded car for June, 29, were the greatest for any month since January, 1919.

Home Cars on Home Lines Increasing

In a circular addressed to the railroads, the Car Service Division says that the percentage of home cars on home lines, which progressed so favorably from March 1 to May 1 and then remained practically stationary from May 1 to July 15, has taken a new start in the right direction. The percentages of *all cars* are as follows:

March	1	21.9	per cent	July	15	26.0 per cent
April	1	24.1	" "	Aug.	1	26.7 " "
May	1	25.9	" "	Aug.	15	27.3 " "
June	1	25.7	" "	Sept.	1	28.0 " "
July	1	26.0	" "			

"The box cars have in this period made a gain from 11.5 per cent to 17.0 per cent; the coal cars from 22.6 per cent to 33.8 per cent. This improvement is attributed perhaps in a large measure to the efforts to relocate equipment, box cars to the West and coal cars to the East. The box cars show a gain, however, in all districts while the coal cars show losses in the three western districts.

"The opportunity to further improve in this situation, which is so much desired by the executives and has been the subject of resolution on their part, is dependent upon the activity of the individual railroad and will not be brought about by anything except a whole-hearted response on the part of all concerned in the handling of cars.

"It is fully realized that the railroads cannot as a whole exact full compliance of car handling on the basis of ownership during such time as the demands for transportation are so much in excess of the car supply. That much can be done, however, to handle cars in accordance with the ownership principle, at the same time meet traffic requirements, must be conceded. A determined effort applied generally on the part of all roads and continued under reasonable supervision will accomplish the desired results.

"The suggestion contained in Circular CCS-26 is renewed —that all roads shall take a survey of the cars owned by its direct connections which are on line and instruct that such cars be sent loaded or empty to the home line. This will be very helpful in accomplishing results."

Cars Unloaded on Sunday

In a bulletin addressed to the roads the Car Service Division says that splendid results have been accomplished by unloading cars on Saturdays and Sundays.

On railroad reports a total of 26,497 cars unloaded on Saturday and Sunday in four weeks, an increase of 60.6 per cent over normal. At one large railroad center served by 23 railroads, 2121 cars were unloaded on one Sunday. At another railroad center 798 cars were unloaded by railroad forces and 241 by individual consignees on one Sunday. At still another railroad center 721 bad order cars were repaired on one Sunday.

"This shows," the bulletin says, "what has been and can be accomplished and the information is offered to the railroads for such use as they may desire to make of it. The hearty co-operation of shippers in this direction is very gratifying, and in order to obtain the full advantage of this co-operation railroads should see to it that the cars so released are promptly moved and returned to service."

Other Car Service Circulars

Instructions contained in Circular CCS-56, issued July 16, providing for a 75 per cent car supply for fertilizer shipments, have been cancelled by the Car Service Division, which says that further shipments of this material shall be accorded full pro rata share of all available cars.

The Car Service Division has been advised by the Interstate Commerce Commission that the War Department is about to enter into various contracts with mines to supply the department with coal for its posts, camps and stations in the Eastern, Northeastern and Central Departments; also that it will be necessary, when these contracts are made and the Interstate Commerce Commission has received notification thereof, to see that the commission's agents under Service Orders Nos. 10 and 11, are instructed that to the extent coal is so supplied to the War Department such mines will be relieved from the burden of any allotment made by the commission's agents under Service Orders 10 and 11.

The circular says that the details of this arrangement will have to be worked out when and as the Interstate Commerce Commision receives information as to the consummation of contracts between the mines and the War Department. It is important, however, that railroads understand the intention to relieve such coal from assessment by the commission's agents under Service Orders Nos. 10 and 11 and all concerned should be informed of the plan and make arrangements to give prompt effect to such instructions as the commission's agents may issue in the premises. It is to be particularly noted that this arrangement does not contemplate that there will be any super-allotment of cars to any mines over and above the commercial distribution except insofar as the same may be required to protect the various utility services at the War Department posts, camps and stations in accordance with Supplement No. 3 to CCS-54 dated September 27, 1920, interpretative of Interstate Commerce Commission Service Order No. 9 as amended and modified.

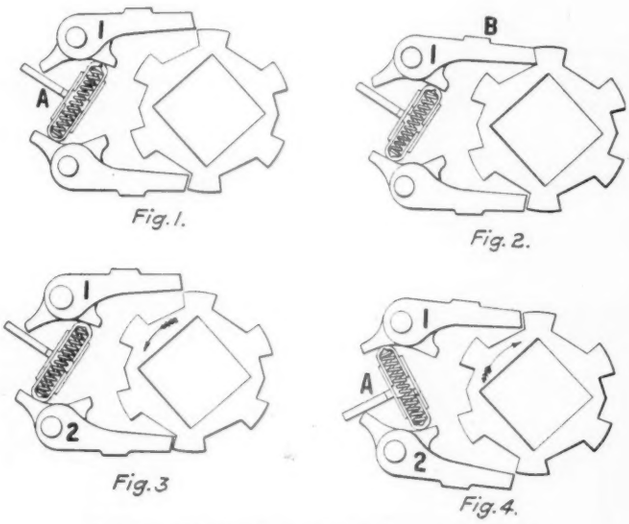
The Interstate Commerce Commission has also advised that the preference in car supply accorded by paragraph 4 of its Service Order No. 9 and the amendments thereto and modifications thereof for the protection of the loading of coal for necessary daily use of utilities privately owned but engaged in public business, shall be understood to apply to like utility services of the War Department at its various posts, camps and stations.

Safety Wrench for Opening Car Hoppers

In releasing the drop doors of freight cars, there is often considerable danger of personal injury. When the latch holding the door is released the load comes on the operating wrench and it may be torn from the grasp of the man using it. To avoid the possibility of accident from this cause, a special type of ratchet wrench is now being made by the Safety Wrench & Appliance Co., Philadelphia, Pa. This device which is known as the "Swaco" safety hopper car wrench allows quick manipulation with assurance of safety.

The mechanism of the wrench is so arranged that the top pawl is automatically thrown to the safety position when the wrench is lowered. Referring to the drawing, the operations in releasing the shaft to open the door are as follows: The spring lever *A* is thrown up as shown in Fig. 1 to force the top pawl *1* out of engagement with the ratchet. The wrench is then placed on the hopper shaft. By placing a finger at *B*, the pawl *1* is pressed down to engage with the ratchet. The operator then pulls up on the wrench handle to take the load off the pawl on the door frame which is lifted out of engagement, leaving the load on the wrench. By quickly lowering the wrench handle pawl *1* is freed from the ratchet, the load rotating the ratchet in the direction shown. Should the door stick, the shaft can be revolved by pushing down on the wrench. To close the door, the spring lever *A* is reversed as shown in Fig. 4 to throw pawl *2* out and pawl *1* into engagement.

The "Swaco" hopper car wrench has a ball bearing head and the entire wrench is made from electric steel castings of high tensile strength. The socket is designed for holding 2 in. square shafts and bushings or reducing sockets are used to fit smaller sizes. This device is being used by railroads and also by many industrial firms.



Ratchet Mechanism of the Swaco Wrench

A Portable Car-Unloader For Bulk Materials

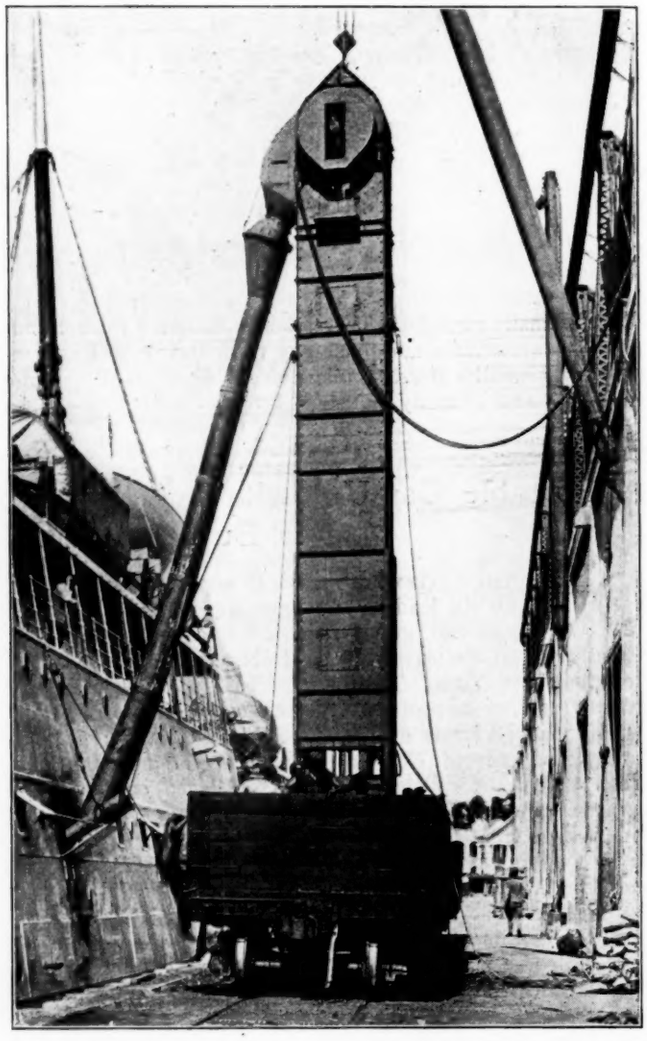
One of the latest machines to appear in the railway field for the loading and unloading of such bulk materials as coal, gravel and sand, is a portable elevator recently put on the market by the DeMayo Engineering Corporation, New York. This elevator has been developed for railway use as a result of the successful employment of similar, though larger machines for the past 15 years in and around the port of New York. All of the machines for either marine or railway use are constructed on the same principle and follow the same general design. The capacities range from 125 tons an hour for the larger sizes down to 50 tons an hour for the smaller, the latter being the size developed for the railroads.

At the present time the rapid loading and unloading of open-top cars is of great importance. The car-unloader, as it is called, was developed from the original DeMayo elevators which have been used chiefly in the past to transfer to vessels bunker coal from barges laid alongside or direct from cars run out on the docks. It was found to be so readily adaptable for the handling of other materials that a smaller machine was constructed to meet the requirements of the railways. As the design is identical in all cases, a detailed description of the standard or 100-ton size will serve to illustrate the manner in which the car-unloader is constructed.

The coal or other material in this class of machine is elevated by an endless steel-plate belt of which every alternate link consists of a rectangular steel bucket 18 in. long, 12 in. wide and 8 in. deep. Both the steel plate links and the buckets are hinged by heavy steel pins extending out about

2 in. at each end. These engage with or in grooves on two sprockets of large diameter located one at each end of a sheet-metal covered steel framework supporting and housing the entire unit. The overall length of the standard elevator is 40 ft. with a cross section measuring 2 ft. 6 in. by 3 ft. 6 in. Double rows of angle iron have been riveted to the sides of the frame to form tracks or guides in which the hinge pins travel after they leave each sprocket. This tends to keep the belt in perfect alinement, prevents any "whip" and renders the use of idlers, etc., unnecessary. The head sprocket is driven at 2½ r. p. m. by a 10-hp. electric motor operating through a double gear reduction, all entirely enclosed. Each bucket as it comes over the upper sprocket discharges into a spout equipped with telescopic sections, giving it a total extended length of about 30 ft. The point of discharge into the spout is about 32 ft. from the digging end.

In operation the unloader is suspended from a swinging



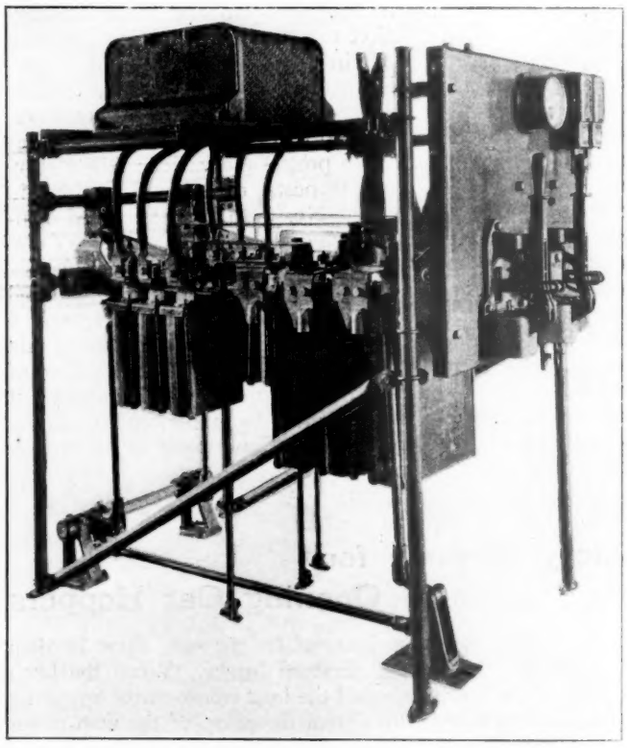
A Standard Machine Unloading at the Rate of 75-100 Tons an Hour

boom by means of some form of tackle and the basis allowed to rest upon the material to be elevated. In this work it is not necessary to maintain the elevator in a vertical position, as it will dig into and elevate the material from practically any position so long as the buckets come in contact with it. An independent power-driven hoist has been installed in the smaller or railroad types so that one attendant can handle the entire operation, raising and lowering the elevator at will through an electric control located at the digging end. The smaller machines weigh about 2 tons and vary in height from 15 ft. to 25 ft. The driving equipment consists of a 5-hp. electric motor and the capacity is, as stated, about 50 tons an hour. This capacity is such that it can unload an ordinary open-top car in from 45 minutes to 1½ hours, depending upon the size of the car and the class of the material. The operation is simple and does not require a trained engineer, while through the use of the long boom or an overhead track and the variable discharge spout coal or other materials may be delivered readily from cars to trucks, to bins or to open storage piles or vice versa.

Induction Motor Control Panels

THE GENERAL ELECTRIC COMPANY, Schenectady, N. Y., has completed the standardization of a line of unit switchboard panels for the control of various forms of induction motors. The panels are designed for the control and safeguarding of motors of either the squirrel-cage or wound rotor types.

Protection of the motor against incorrect sequence of



Three Phase Standard Unit Induction Motor Panel of Heavy Current Capacity for Squirrel Cage Motor

operation in starting is provided by mechanical and electrical interlocks. Protection against radical drop in supply voltage is given by an under-voltage device which causes the breaker to open. Unnecessary interruptions of service are avoided by the use of a time-limit trip, but in the event of sustained overload, the breaker in the circuit of the motor opens as determined by the time setting of the relay furnished as a part of the equipment.

G. T. R. WELFARE SUPERINTENDENT.—The Grand Trunk has appointed Mrs. E. H. Gaudion welfare superintendent of the female clerical staff at the offices in Montreal.

General News Department

The Smoke Prevention Association will hold its fourteenth annual convention at the Hotel Sherman, Chicago, on October 5, 6, 7 and 8.

Fairfax Harrison, president of the Southern Railway, was one of eleven employees and officers of the system to receive "loyalty" medals on September 22. The medals are given to all employees of the road on completion of 25 years' service.

The ninth annual congress of the National Safety Council opened at Milwaukee, Wis., on September 27. The Steam Railroad Section's meetings began on September 29. A report of the meetings of this section will appear in next week's issue of the *Railway Age.*

The Grand Order of Supervisors of Railroads will hold its third annual convention on October 11 and 12 at Columbus, Ohio. All supervisory foremen are requested to send representatives. Among the matters for discussion will be questions of production, efficiency, shop methods and practices, and the question of the classification of subordinate officials.

Imprisonment for two years was the sentence passed on Frederick Vollers, an employee of the Baltimore & Ohio Railroad, at Frederick, Md., on September 24, for stealing merchandise from freight cars; and two other employees received sentences of one year each. The judge said that of men guilty of freight car thefts, only about one in twenty ever suffers punishment.

The Advisory Committee appointed by the mayor of Los Angeles, Cal., to investigate the controversy over the proposed Plaza terminal site and the Arcade plan, brought before the Public Utilities Committee of the city council, on September 13, strong recommendations in favor of the Plaza site for a union terminal. This is in line with the plans outlined by Engineer Sachse, of the State Railroad Commission.

The Western Society of Engineers, Chicago, and the Chicago section of the Signal Division of the American Railroad Association, will hold a joint technical meeting on Thursday evening, October 21, at which time W. P. Borland, chief of the Bureau of Safety of the Interstate Commerce Commission, Washington, D. C., and W. B. Murray, engineer of the Miller Train Control Company, Danville, Ill., will present the subject of "Automatic Train Control."

The Interstate Commerce Commission has isued its summary of traffic statistics for the large steam roads for the month of May, showing a total of revenue tons carried one mile of 32,926,962,000 as compared with 29,284,909,000 in May, 1919. The average miles per revenue ton per railroad was 189.25 as compared with 177.89 and the revenue per ton mile was .946 cents as compared with .972. The number of revenue passengers carried one mile was 3,760,702,000 as compared with 3,649,431,000. The average miles per revenue passenger per railroad was 36.67 as compared with 38.75 and the average revenue per passenger mile was 2.624 cents as compared with 2.539 cents.

Governor J. M. Cox, of Ohio, Democratic candidate for president, was in a derailment on the Atchison, Topeka & Santa Fe at Peoria, Ariz., on September 22, about 4 P. M., the special train in which he was traveling having been thrown off the track, when moving at about 35 miles an hour. One engineman had his leg broken, but all other persons on the train escaped serious injury. **Senator W. G. Harding,** Republican candidate, had a somewhat similar experience on the Pennsylvania, at Pittsburgh, Pa., on the 27th, when a switching train on a side track, started to foul the main line a few seconds before the rear of the special train passed. Both trains were moving at low speed, but two cars were badly scratched. This accident occurred before daylight in the morning. On Wednesday, the 29th, another accident happened to Senator Hardnig's train. It was at Millwood, W. Va., on the Ohio River division of the Baltimore & Ohio. While the train was moving at about 40 miles an hour the Senator's car, the fifth and last one of the train, was derailed by a broken truck and ran 400 ft. on the ties before it was stopped. In this distance it passed over a bridge 80 ft. high, being kept on the bridge floor by the guard rail. There were no serious personal injuries.

At the September meeting of the Traffic Club of New York, September 28, in the Hotel Waldorf-Astoria, New York, A. H. Armstrong, of the General Electric Company, spoke on the subject "Steam vs. Electricity," and W. A. Schumacher, of the United Fruit Company, gave a talk describing the banana industry. Mr. Armstrong's talk was illustrated with lantern slides, was general in character and was punctuated with facts which indicated that he is making preparations to meet any counter claims which may be made by the steam locomotive advocates. Mr. Schumacher described the origin and growth of the banana industry and described in detail the manner in which bananas are brought to market, laying particular stress on the need of having ventilated refrigerator cars for shipping them. His address was concluded by a carefully prepared motion picture which followed the banana from the time it was planted until it reached the consumer.

Canadian Railway Club

Inventions for patents will be the subject of the paper to be presented by W. P. McFeat at the October 12 meeting of the Canadian Railway Club. Mr. McFeat is a patent solicitor of Montreal.

Steam and Electric Locomotives to be Compared

The relative advantage of modern steam and electric locomotives are to be described in four papers to be presented before a joint meeting of the New York Section of the American Institute of Electrical Engineers, the Metropolitan Section of the American Society of Mechanical Engineers and the Railroad Section of the A. S. M. E., to be held October 22, in the Engineering Societies building, 29 West 39th street, New York.

The papers on steam locomotives will be presented by J. R. Muhlfeld, vice-president, Railway & Industrial Engineers, Inc., and W. E. Woodard, vice-president, Lima Locomotive Works.

The papers on electric locomotives will be presented by A. H. Armstrong, chairman electrification committee, General Electric Company, and F. H. Shepard, director of heavy traction, Westinghouse Electric & Manufacturing Company.

The following men have agreed to take part in the discussion: W. L. Bean, mechanical assistant, New York, New Haven & Hartford; A. W. Gibbs, chief mechanical engineer, Pennsylvania system; F. H. Hardin, chief engineer motive power and rolling stock, New York Central; F. W. Kiesel, Jr., mechanical engineer, Pennsylvania system; C. H. Quinn, chief electrical engineer, Norfolk & Western; A. L. Ralston, mechanical superintendent, New York, New Haven & Hartford; and R. Beeuwkes, electrical engineer, Chicago, Milwaukee & St. Paul.

The meeting will be conducted by a joint committee of the three society sections, will be opened by Frank J. Sprague, Sprague Safety and Signal Corporation, and George Gibbs, chief engineer electric traction, of the Long Island, will close the discussion.

St. Louis Railway Club

R. D. Sangster, industrial commissioner of the St. Louis Chamber of Commerce, will read a paper on Industrial Conditions at the next meeting of the St. Louis Railway Club, which will be held on October 8.

The Philadelphia-Camden Bridge

The bridge and tunnel commission, which, on behalf of the states of Pennsylvania and New Jersey, is to begin the construction of a bridge across the Delaware river at Philadelphia, met in that city on September 24 and chose the members of a board of engineers to prepare plans. These engineers are Ralph Modjeski, of Chicago, chairman; George S. Webster, chief of the bureau of surveys, Philadelphia, and Lawrence A. Ball, of East Orange, N. J.

Superintendents' Association

At a meeting of the executive and advisory committee of the American Association of Railroad Superintendents held in St. Louis, Mo., on August 28, steps were taken to revive the activities of this organization, which has been inactive during the period of government control. The secretary-treasurer presented a report showing that the association now has 1,205 members, an increase of 391 over the number on January 1, 1918. It was decided to hold the thirtieth annual convention at Kansas City, Mo., on August 24, 25 and 26, 1921.

"Release Cars With the Greatest Expedition"

In an effort to speed up freight car movement, the Illinois Agricultural Association has informed its membership of 86 county farm bureaus of the delinquency of shippers in delaying cars and urges prompt loading and unloading. This fact was brought to the attention of the secretary of the association by the reply of C. H. Markham, president of the Illinois Central, to an earlier statement of the association noted in an article which appeared in the *Railway Age* of September 17 (page 471). Mr. Markham, in his reply, showed that more long delays to cars were occasioned by shippers holding cars to load or unload than because of all other reasons combined. The secretary of the association, in his letter to the farm bureaus, calls their attention to this delinquency of shippers in delaying freight cars unduly and urges that those of the 97,000 members of the association having cars to load or unload do so promptly upon receipt of cars.

He also states that "Mr. Markham's analysis of the figures indicates that the answer to the question raised by the agricultural association as to whether the apparently slow movement of freight cars was due to the inertia of railroad officials is decidedly in the negative in so far as the Illinois Central is concerned." In closing, the association's letter states that "with the switchmen's vacation ending and with the return of great numbers of experienced men to work, and with the railroad officers exerting themselves to efficient movement of cars, it now seems up to all shippers to exert themselves to release cars with the greatest expedition."

Roadmasters Closing Business

The election of officers at the convention of the Roadmasters' Association at St. Louis, which was reported in last week's issue, page 531, resulted in the election of: President, W. P. Wiltsee, principal assistant engineer, Norfolk & Western, Roanoke, Va.; first vice-president, L. M. Denney, supervisor, Cleveland, Cincinnati, Chicago & St. Louis, Indianapolis, Ind.; second vice-president, J. P. Corcoran, roadmaster, Chicago & Alton, Bloomington, Ill.; secretary, P. J. McAndrews, roadmaster, Chicago & North Western, Sterling, Ill.; treasurer, Coleman King, supervisor, Long Island Railroad, Jamaica, N. Y.; members of the executive committee for four-year term, J. Martin, New York Central, Elkhard, Ind., and J. W. Blalock, Chicago, Rock Island & Pacific, Pratt, Kan.; G. W. Koontz, Delaware & Hudson, Carbondale, Pa., for one year, to fill unexpired term of Mr. Corcoran. Chicago was selected as the place for holding the next convention.

The subjects selected for consideration by the association during the ensuing year, together with the names of chairmen of committees assigned to report on them, are as follows: (1) The Classification and Distribution of Second-hand Rail, W. Shea, general roadmaster, C. M & St. P., Chicago, chairman; (2) The Most Economical Method of Laying and Renewing Track and Switch Ties, with Special Reference to the Conservation of Time and Timber, G. S. Brooks, general roadmaster, Terminal Railroad of St. Louis, St. Louis, chairman; (3) Methods of Stimulating Rivalry Between Track Forces, G. W. Koontz, roadmaster, D. & H., Carbondale, Pa.; (4) The Construction and Maintenance of Railroad Crossings, D. O'Hearn, roadmaster, E. J. & E., Joliet, Ill., chairman, and (5) The Records and Accounts of a Roadmaster's Office, F. J. Meyer, assistant engineer, N. Y., O. & W., Middletown, N. Y., chairman.

The Track Supply Association held its business meeting on Thursday morning and elected the following officers for the ensuing year: President, David T. Hallberg, assistant general sales agent, the P. & M. Company, Chicago; vice-president, Herbert T. Potter, sales manager, the Wyoming Shovel Works, Wyoming, Pa.; secretary-treasurer, W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y.; directors, Alexander Chapman, the Rail Joint Company, Chicago; F. M. Condit, Fairbanks, Morse & Co., Chicago; J. J. Cozzens, Union Switch & Signal Company, Swissvale, Pa., and A. H. Told, Positive Rail Anchor Company, Marion, Ind.

New York Central Motion Picture, "Bulletin 70"

Marcus A. Dow, general safety agent of the New York Central, has brought out a fourth motion picture for use in giving safety lessons to the employees of the road, and it is being exhibited this week at the National Safety Congress in Milwaukee. Unlike "The House That Jack Built" and other films heretofore produced for the New York Central, the present one deals mainly with the startling facts of the railroad accident records of the whole country; and the "human interest" features which are introduced to relieve the horrors of the exhibition are somewhat less prominent.

The title of this film is "Bulletin 70," and the story is based on the annual statistical accident report of the Interstate Commerce Commission for the calendar year 1918, which was contained in the bulletin of that number. This bulletin was issued last January, and was noticed in the *Railway Age* of January 23 and January 30. That record tells of 9,286 persons killed and 174,575 injured on the railroads of the United States in the twelve months, and the details and classifications of casualties fill 30 large pages—not to mention $40,000,000 in money damages. Mr. Dow has been able, of course, only to touch a few of the "high spots" of the record.

The picture opens with a procession of railroad employees marching into the jaws of a devouring dragon. The scene soon changes to a magnified copy of the bulletin, followed by views of pages of statistics, both full sheets, and "close-ups" of specially significant figures. For example, the fact that 164 employees were injured while adjusting car couplers with the foot (Table 105, page 27) is shown up in such large figures that the most indifferent observer must begin to apprehend the significance of the statement.

The author has aimed to make it clear to the reader that a story of actual events, not a mere lecture, is being laid before him, and to impress the magnitude of the losses of life, limb and comfort by concentrating attention on single classes or kinds of carelessness.

Collisions and other hair-raising scenes are shown, as in the former motion pictures; and also a number of animated drawings. In one of these latter, two freight cars are bumped together, withdrawn, and then bumped again; and at each operation a figure, representing a man, steps between the cars and is crushed; and when the cars are pulled apart, the man falls some 20 ft. into a hopper marked "Hospital." This operation is repeated over and over, thus giving an idea of the frequency of that general class of bodily injury. The statement that 156,013 railroad employees had to go to the hospital in a year—say, one every three or four minutes, night and day—is so staggering that the mind cannot fully grasp it; but to *see* a man pitched into this "hopper" every two seconds helps to fix that fact in the memory.

Highway crossing dangers are also included, and attention is called to the fact that every year in this country 17 miles of automobiles are struck by trains. The engineman who is at all careless or indifferent about sounding the whistle to give warning to careless drivers at crossings, is impressed by a vivid picture showing the way in which it is desired to have the whistle sounded.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—F. M. Nellis, Room 3014, 163 Broadway, New York City.

AIR BRAKE APPLIANCE ASSOCIATION.—Fred W. Venton, 836 So. Michigan Ave., Chicago.

AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, Supervisor of Demurrage and Storage, C. & N. W. Ry., Chicago.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—S. W. Derr, Philadelphia & Reading, Philadelphia, Pa.

AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, C. & E. I. R. R., 332 South Michigan Ave., Chicago. Next meeting, November 16-18, 1920, St. Louis, Mo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York. Next annual meeting, October 14-15, Chicago.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next convention, August 24-26, 1921, Kansas City, Mo.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th St., New York.

AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—C. F. J. Deli, 50 E. 42nd St., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCATION.—Otto E. Schlinck, 185 W. 5th St., Peru, Ind.

AMERICAN RAILROAD ASSOCIATION.—J. E. Fairbanks, 75 Church St., New York. Next regular meeting November 17, 1920, Chicago.

Section I, Operating (including former activities of Association of Railway Telegraph Superintendents).—W. J. Fripp (chairman), N. Y. C. R. R., New York, N. Y.

Telegraph and Telephone Division.—J. F. Caskey (chairman), Supt. of Telegraph, Lehigh Valley.

Section II, Engineering.—E. H. Fritch, 431 South Dearborn St., Chicago.

Signal Division.—H. S. Balliet, 75 Church St., New York. Exhibit by Signal Appliance Association.

Section III, Mechanical (including former activities of Master Car Builders' and Master Mechanics' Association).—V. R. Hawthorne, 431 South Dearborn St., Chicago. Next convention, June 15-22, Atlantic City, N. J. Exhibit by Railway Supply Manufacturers' Association.

Equipment Painting Division—V. R. Hawthorne, Secretary.

Section IV, Traffic.—Robert C. Wright (chairman), General Traffic manager, P. R. R., Philadelphia, Pa.

Section V, Transportation (including former activities of Association of Transportation and Car Accounting Officials.—E. J. Pearson (chairman), President, N. Y., N. H. & H. R. R., New Haven, Conn.

Section VI, Purchases and Stores (including former activities of Railway Storekeepers' Association).—J. P. Murphy, N. Y. C. R. R., Collinwood, Ohio.

Section VII, Freight Claims (including former activities of the Freight Claim Association).—Lewis Pilcher, 431 South Dearborn St., Chicago. Next meeting, November 17, 1920.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Austin Station, Chicago. Next convention, October 26-28, 1920, Atlanta, Ga. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railroad Association, Section II.) E. H. Fritch, 431 South Dearborn St., Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railroad Association, Section III, Mechanical.)

AMERICAN RAILWAY PERISHABLE FREIGHT ASSOCIATION.—E. F. McPike, 135 E. 11th Place, Chicago. Regular meetings, 2nd Wednesday in March and September.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—R. D. Fletcher, 1145 East Marquette Road, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, University of Pennsylvania, Philadelphia, Pa.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Col. H. S. Crocker (acting secretary), Engineering Societies Building, 33 W. 39th St., New York. Annual convention, August 10-12, Multnomah Hotel, Portland, Oregon. Regular meetings, 1st and 3d Wednesday in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.

AMERICAN STEEL TREATERS' SOCIETY.—W. H. Eisenman, 154 East Erie St., Chicago

AMERICAN TRAIN DESPATCHERS' ASSOCIATION.—C. L. Darling, Northern Pacific Ry., Spokane, Wash. Next convention, June 20, 1921, Kansas City, Mo.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, B. & O., Mt. Royal Sta., Baltimore, Md. Next annual meeting, January 25-27, 1921, San Francisco.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—Willis H. Failing, C. R. R. of N. J., Jersey City, N. J.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Exhibit by Railway Electric Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Thomas De Witt Cuyler (chairman), 61 Broadway, New York, N. Y.

ASSOCIATION OF RAILWAY SUPPLY MEN.—C. L. Mellor, 212 W. Illinois St., Chicago. Meeting with International Railway General Foremen's Association.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railroad Association, Section I, Operating.)

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railroad Association, Section V, Transportation.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—G. R. McVay, Barrett Company, Chicago. Meeting with convention of American Railway Bridge and Building Association, October 26-28, 1920, Atlanta, Ga.

CANADIAN RAILWAY CLUB.—W. A. Booth, 131 Charron St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, New Morrison Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS.—Thomas B. Koencke, Federal Reserve Bank Bldg., St. Louis, Mo. Meetings first Tuesday in month at the American Hotel Annex, St. Louis.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meetings, 2d Thursday in November and 2d Friday in January, March, May and September, Hotel Statler, Buffalo, N. Y.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—J. C. Keene, General Car Inspector, Wabash R. R., Decatur, Ill.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—W. R. Elliott, Terminal R. R. Ass'n. of St. L., St. Louis, Mo.

CINCINNATI RAILWAY CLUB.—H. Boutet, 101 Carew Bldg., Cincinnati, Ohio.

EASTERN RAILROAD ASSOCIATION.—D. G. Stuart, Washington, D. C.

FREIGHT CLAIM ASSOCIATION.—(See American Railroad Association, Section VII, Freight Claims.)

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Sta., Chicago. Regular meetings, Wednesday preceding 3d Friday in month, Room 856, Insurance Exchange Bldg., Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. G. Crawford, 702 E. 51st St., Chicago. Next annual meeting, May, 1921, Hotel Sherman, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn. Exhibit by Association of Railway Supply Men.

MAINTENANCE OF WAY MASTER PAINTERS' ASSOCIATION.—E. E. Martin, Union Pacific R. R., Room No. 19, Union Pacific Bldg., Kansas City, Mo. Next convention, October 5-7, 1920, Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—(See American Railroad Association, Section III, Equipment Painting Division.)

MASTER CAR BUILDERS' ASSOCIATION.—(See American Railroad Association, Section III, Mechanical.)

NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.—E. E. Pershall, T. J. Moss Tie Company, 720 Security Bldg., St. Louis, Mo. Next annual convention, January 27-28, 1921, San Francisco.

NATIONAL ASSOCIATION OF RAILWAY AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York. Next convention, November 9-12, 1920, Washington, D. C.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. W. Kelly, Kelly-Derby Co., Peoples Gas Bldg., Chicago. Meeting with American Railway Engineering Association.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2d Tuesday in month, excepting months of June, July, August and September.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meeting 2d Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Bldg., Washington, D. C.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Americus Club House, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—D. C. Welty, Missouri Pacific R. R., Little Rock, Ark.

RAILWAL ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—D. L. Eubank, Galena Signal Oil Company, Richmond, Va. Meeting with traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md. Next annual meeting, October 19-21, Southern Hotel, Baltimore, Md.

RAILWAY REAL ESTATE ASSOCIATION.—R. H. Morrison, C. & O. Ry., Richmond, Va.

RAILWAY SIGNAL ASSOCIATION.—(See American Railroad Association, Section II, Signal Division.)

RAILWAY STOREKEEPERS' ASSOCIATION.—(See American Railroad Association, Section VI, Purchases and Stores.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meeting with American Railroad Association, Section III, Mechanical.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Co., 30 Church St., New York.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Exhibit by Track Supply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Schroeder Headlight & Generator Co., New York City. Meeting with American Railroad Association, Signal Division.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3d Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, Western Ry. of Ala., Atlanta, Ga.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—C. N. Thulin, Duff Manufacturing Company, 935 Peoples Gas Bldg., Chicago.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., Cleveland, O. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN ASSOCIATION OF SHORT LINE RAILROADS.—Clarence M. Oddie, Mills Bldg., San Francisco.

WESTERN RAILWAY CLUB.—J. M. Byrne, 916 W. 78th St., Chicago. Regular meetings, 3d Monday in month, except June, July and August.

REVENUES AND EXPENSES OF RAILWAYS.

MONTH OF JULY, 1920

Name of road.	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Maintenance of: Way and structures.	Equipment.	Operating expenses: Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
Alabama & Vicksburg	141	$174,149	$79,233	$274,695	$56,351	$58,115	$5,910	$101,275	$9,872	$234,534	85.37	$40,162	$14,639	$25,522	—$8,715
Ann Arbor	301	430,961	75,689	537,185	55,942	91,821	12,925	195,035	19,558	375,289	69.86	161,896	17,500	144,363	51,787
Arizona Eastern	383	269,173	48,980	343,914	70,617	49,234	2,605	115,085	20,314	261,241	75.96	82,673	17,997	64,716	—13,981
Atchison, Topeka & Santa Fe	8,829	11,672,015	4,837,293	18,060,954	2,638,157	4,012,834	201,028	6,403,163	322,486	13,572,032	75.14	4,488,922	970,427	3,517,996	—177,334
Atlanta & W. Point	93	105,331	103,625	237,590	39,193	47,394	7,112	101,447	12,097	211,663	89.08	25,927	8,928	16,999	—28,150
Atlanta, Birmingham & Atlantic	639	369,118	111,432	514,185	133,503	137,191	20,180	262,750	18,996	572,726	111.38	—58,541	16,330	—74,991	—43,020
Atlantic City	177	75,761	586,747	687,292	48,938	44,267	7,004	274,751	1,036	376,078	54.71	311,214	14,520	296,693	67,664
Atlantic Coast Line	4,889	3,820,878	1,421,856	5,717,449	1,366,524	1,657,626	86,897	3,348,800	167,600	6,653,856	116.37	—936,407	300,000	—1,237,708	—1,424,279
Atlantic & St. Lawrence	166	156,248	59,241	234,275	66,151	61,006	2,425	134,149	9,971	275,829	117.74	—41,554	17,722	—59,276	82,936
Baltimore & Ohio Chicago Terminal	90	.....	.....	141,426	67,423	57,522	1,186	141,460	10,108	284,607	201.24	—143,181	31,169	—174,356	—162,330
Baltimore & Ohio	5,153	14,675,650	2,878,720	19,072,421	3,720,011	7,344,336	315,798	11,789,454	666,787	24,021,207	125.94	—4,948,785	550,494	—5,510,122	—7,707,447
Baltimore, Chesapeake & Atlantic	87	93,786	76,177	179,202	17,668	25,059	1,268	113,839	4,371	162,203	90.51	16,998	3,700	13,298	135,978
Bangor & Aroostook	658	309,884	88,376	436,292	126,001	140,685	4,449	190,009	23,634	492,998	112.99	—56,706	26,998	—83,704	—19,602
Belt Ry. of Chicago	31	.....	.....	381,857	58,358	52,596	762	229,865	9,861	351,443	92.03	30,414	24,767	5,647	—69,853
Bessemer & Lake Erie	225	1,431,603	52,607	1,513,214	175,473	364,826	13,066	443,163	26,919	1,032,140	68.20	481,073	15,800	465,274	—18,935
Bingham & Garfield	36	167,052	1,592	171,316	36,068	32,277	1,845	36,365	6,519	113,183	66.07	58,133	7,425	50,708	81,172
Birmingham Southern	31	39,484	.....	51,559	5,399	10,727	1,345	29,602	3,754	50,827	98.58	733	1,754	—1,034	—8,949
Boston & Maine	2,304	4,271,406	2,441,251	7,508,589	1,127,799	1,377,117	56,864	3,959,131	251,218	6,825,460	90.88	685,129	236,539	448,581	—332,145
Brooklyn Eastern District Terminal	9	112,751	.....	124,044	7,117	17,090	275	63,823	4,851	93,156	75.09	30,888	6,319	24,569	33,487
Buffalo & Susquehanna R.R. Corp	296	232,963	6,904	244,006	66,929	96,923	2,299	81,253	12,878	260,283	106.67	—16,276	7,000	—23,278	—19,536
Buffalo, Rochester & Pittsburgh	589	1,606,396	183,302	1,871,728	396,443	654,412	22,446	913,591	45,522	2,032,986	108.61	—161,259	35,000	—196,259	—249,481
Canadian Pacific (Lines in Maine)	233	112,427	37,229	156,354	60,836	40,348	3,455	91,446	3,770	199,854	127.82	—43,500	12,200	—55,700	2,712
Carolina, Clinchfield & Ohio	282	504,849	50,348	566,966	77,484	134,699	16,742	177,543	20,413	426,481	75.22	140,485	28,830	111,655	—92,069
Central New England	301	620,749	29,713	676,505	236,866	211,702	5,356	561,694	22,841	1,031,106	152.41	—354,601	18,225	—372,826	—513,640
Central of Georgia	1,924	1,423,610	654,457	2,289,049	474,171	561,354	58,463	1,175,465	92,761	2,367,521	103.43	—78,472	81,332	—159,852	—468,655
Central R.R. of New Jersey	686	3,459,315	1,228,582	4,997,797	469,641	1,547,748	31,923	2,084,219	90,623	4,265,463	85.35	732,334	354,527	377,806	—549,290
Central Vermont	413	457,721	111,733	624,655	110,346	201,683	7,353	407,713	18,975	747,925	119.73	—123,270	17,400	—140,683	—84,708
Charleston & Western Carolina	342	218,595	60,024	296,971	73,553	58,583	6,841	167,345	11,889	318,211	107.15	—21,241	11,625	—32,986	—41,736
Chesapeake & Ohio	2,520	5,616,024	1,085,415	7,259,357	1,261,839	2,378,699	53,508	3,498,596	176,985	7,404,708	102.00	—145,351	349,810	—495,194	—1,914,278
Chicago & Alton	1,050	1,909,376	625,576	2,795,251	550,396	787,901	55,771	1,429,391	73,932	2,905,216	103.93	—109,965	76,851	—186,947	—462,444
Chicago & Eastern Illinois	1,130	1,460,865	501,021	2,161,309	519,888	927,796	33,727	1,374,922	79,277	2,949,770	136.48	—788,461	100,000	—888,682	—982,064
Chicago, Det. & Canada Grand Trunk Jct.	62	117,835	45,682	194,905	19,337	26,638	2,162	104,476	4,425	157,068	80.58	37,837	4,596	33,239	—46,251
Chicago & Erie	269	1,027,145	101,179	1,207,623	176,609	238,711	16,707	618,446	36,129	1,088,491	90.14	119,133	40,909	78,197	4,614
Chicago & North Western	8,406	9,687,665	3,716,798	14,801,129	2,690,226	2,665,346	131,251	6,105,948	333,322	12,058,127	81.46	2,743,002	725,000	2,017,739	—1,055,882
Chicago, Burlington & Quincy	9,369	9,840,302	3,425,143	14,720,003	3,080,934	3,156,822	161,788	5,948,916	538,011	13,046,019	88.62	1,673,984	738,799	934,835	—1,753,224
Chicago Great Western	1,496	1,295,488	508,722	1,979,581	744,301	736,367	51,312	1,085,546	66,491	2,703,664	136.57	—724,083	81,836	—803,668	—1,135,296
Chicago, Ind. & Louisville	654	952,446	296,407	1,375,040	187,248	377,760	28,193	603,592	32,121	1,245,935	90.61	129,105	44,899	84,183	—9,200
Chicago Junction	12	.....	.....	280,124	47,964	61,723	299	359,019	9,966	478,971	170.98	—198,847	4,401	—203,249	—199,265
Chicago, Milwaukee & St. Paul	10,629	10,409,447	3,059,248	15,083,931	2,949,639	2,989,297	135,927	6,318,020	443,996	12,934,027	85.74	2,149,904	677,263	1,472,453	2,155,067
Chicago, Peoria & St. Louis	247	196,883	29,774	241,846	34,730	63,346	6,593	123,310	11,149	239,129	98.87	2,717	7,100	—4,383	78,659
Chicago, Rock Island & Gulf	461	414,873	115,434	578,357	79,845	93,609	10,852	231,566	14,912	431,818	74.66	146,539	12,833	133,686	69,766
Chicago, Rock Island & Pacific	7,662	7,790,733	3,173,286	11,897,838	3,432,588	3,910,021	162,790	6,192,899	353,164	14,086,758	118.39	—2,188,921	460,352	—2,649,873	—4,357,948
Chicago, St. Paul, Minn. & Omaha	1,749	1,600,683	760,544	2,559,875	618,962	483,108	27,175	1,110,655	79,481	2,334,235	91.18	225,640	128,547	96,156	—238,688
Chicago, Terre Haute & S. E.	374	416,133	27,695	456,867	99,814	214,910	6,662	265,883	15,863	605,702	132.57	—148,835	19,500	—168,335	150,332
Cincinnati, Indianapolis & Western	321	302,412	68,209	392,716	77,505	116,977	8,993	175,846	19,724	399,965	101.84	—7,249	13,538	—20,788	14,427
Cincinnati Northern	245	259,719	25,406	291,307	52,532	65,245	4,044	123,138	6,745	251,703	86.40	39,604	10,720	28,883	—25,896
Clev., Cinc., Chicago & St. Louis	2,408	5,077,579	1,908,156	7,697,773	1,318,126	1,978,129	98,358	3,457,826	170,444	7,092,860	92.14	604,912	237,478	367,191	—1,000,614
Colorado & Wyoming	43	25,242	1,009	88,959	21,750	17,395	777	63,365	4,179	107,460	120.79	—18,501	5,000	—23,501	—29,329
Copper Range	142	47,988	12,211	65,995	25,464	16,425	2,074	31,818	2,348	78,129	183.86	—12,133	6,859	—18,992	—23,926
Colorado & Southern	1,099	814,488	329,461	1,235,843	306,659	309,429	15,636	439,300	47,260	1,133,253	91.69	102,590	59,791	42,624	—142,384
Delaware & Hudson	858	3,511,326	368,717	4,055,981	426,077	1,113,123	38,893	1,976,905	156,482	3,744,443	92.31	311,539	81,500	230,032	—255,051
Delaware, Lackawanna & Western	957	4,860,399	1,371,081	7,038,977	953,491	1,537,932	96,125	3,302,260	157,749	6,161,115	87.52	877,861	389,583	488,272	—903,279
Denver & Rio Grande	2,585	2,234,205	900,855	3,422,871	652,562	709,608	53,535	1,168,484	79,545	3,756,982	80.55	665,888	135,000	530,873	—93,356
Denver & Salt Lake	255	191,639	69,731	273,456	106,892	71,669	883	143,982	10,574	333,999	122.13	—60,544	9,000	—69,544	—15,149
Detroit & Mackinac	376	118,617	43,051	180,849	36,964	53,492	2,935	76,135	7,763	176,980	97.86	3,870	10,958	—7,088	—53,029
Detroit, Grand Haven & Milwaukee	195	403,500	39,239	496,615	68,643	74,362	7,289	279,812	15,012	446,033	89.81	50,583	3,088	47,457	—26,889
Detroit, Toledo & Ironton	454	383,781	17,698	427,334	174,395	99,275	8,964	230,689	16,962	530,285	124.09	—102,952	9,039	—112,035	—94,258
Duluth & Iron Range	298	1,606,794	26,446	1,763,078	150,106	125,404	1,863	320,906	20,519	619,776	35.15	1,143,302	90,729	1,052,536	263,492
Duluth, Missabe & Nor	406	2,904,428	56,720	3,307,748	239,472	147,615	3,101	514,820	22,491	929,445	28.10	2,378,302	167,943	2,210,359	—209,371
Duluth, South Shore & Atlantic	614	358,954	140,281	545,589	106,115	82,152	4,449	231,030	10,840	442,908	81.18	102,681	25,000	77,538	13,842
Duluth, Winnipeg & Pacific	178	148,526	26,181	185,093	48,929	41,455	3,806	95,998	9,011	199,199	107.62	—14,106	9,297	—23,461	—13,578
East St. Louis Connecting	3	.....	.....	114,590	15,390	23,471	287	92,644	3,655	135,445	118.20	—20,855	2,864	—23,719	39,692
El Paso & S. W	1,027	907,939	235,357	1,210,508	186,317	214,580	22,605	322,611	46,552	803,220	66.35	407,288	100,414	306,791	252,992
Elgin, Joliet & Eastern	834	1,653,867	46	1,858,497	234,681	404,766	6,958	805,781	38,262	1,488,663	80.10	369,833	54,505	315,329	—261,027
Erie	1,989	7,460,647	1,475,717	9,751,932	1,840,413	3,385,728	141,094	5,569,312	335,473	11,358,699	116.47	—1,606,767	247,583	—1,854,835	—2,241,475
Florida East Coast	764	463,215	221,311	830,988	145,830	207,436	6,784	393,410	26,046	797,164	95.92	33,824	79,160	—47,565	—124,418
Fondo, Johnstown & Gloversville	88	43,181	86,425	134,998	13,748	13,385	824	43,284	20,000	91,241	67.58	43,757	5,075	38,682	4,097
Ft. Smith & Western	253	90,857	37,649	138,123	29,201	32,769	4,450	58,593	8,179	134,433	97.33	3,690	5,000	—1,310	—16,415
Ft. Worth & D. City	454	639,753	408,494	1,101,355	169,232	256,764	9,305	414,194	39,817	898,967	81.62	202,389	23,100	179,257	—176,578

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY, 1920 (CONTINUED)

Name of road.	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Maintenance of: Way and structures.	Equipment.	Operating expenses: Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
Galveston, Harr. & S. A.	1,384	$1,390,421	$512,106	$2,075,638	$759,584	$485,000	$42,886	$733,326	$72,346	$2,115,992	101.94	—$40,354	$67,856	—$109,648	—$554,805
Georgia	328	344,947	160,448	547,155	107,045	129,960	14,281	297,658	22,376	571,569	104.46	—24,413	5,950	—30,363	—110,997
Georgia & Florida	405	94,796	33,518	136,197	75,368	35,281	6,579	109,034	10,468	236,731	173.81	—100,534	6,383	—106,922	—80,070
Grand Trunk Western	350	1,120,621	279,527	1,498,542	327,804	332,976	25,305	770,938	50,239	1,515,060	101.10	—16,518	51,084	—67,629	—271,271
Great Northern	8,175	7,549,806	2,066,252	10,780,786	2,731,108	1,865,516	100,092	4,027,873	239,728	9,113,681	84.53	1,667,106	801,144	865,108	—2,107,268
Green Bay & Western	252	71,908	18,746	98,890	19,288	23,156	2,034	40,758	3,120	88,356	89.34	10,534	6,824	3,710	9,804
Gulf & Ship Island	307	163,478	64,216	245,824	84,024	65,086	6,496	97,823	13,814	258,634	52.11	—12,810	39,381	—52,202	77,025
Gulf, Colorado & Santa Fe	1,907	1,240,941	597,800	1,962,931	603,282	444,561	26,547	904,974	54,131	2,032,918	103.56	—69,986	87,016	—157,184	—313,727
Gulf, Mobile & Northern	470	190,240	165,573	274,783	182,107	97,240	12,853	141,749	18,353	452,302	164.60	—177,518	14,175	191,699	—211,043
Hocking Valley	350	1,282,183	126,734	1,523,062	220,601	790,985	3,554	668,039	49,399	1,737,576	114.08	—214,514	75,976	—290,490	—782,583
Houston & Texas Central	915	585,585	283,548	952,033	266,038	183,333	17,001	381,091	26,946	874,231	91.82	77,802	42,559	34,766	—89,449
Houston East & West Texas	190	137,969	65,890	222,617	137,606	31,667	4,020	94,297	7,909	274,610	123.35	—51,993	8,489	—60,580	—106,746
Illinois Central	4,799	8,243,019	2,396,940	11,646,139	2,512,948	3,009,263	92,005	4,988,215	261,450	10,956,967	94.08	689,172	674,383	14,294	785,437
Illinois Terminal	24	100,789	.....	107,855	3,720	9,658	625	24,537	5,577	44,118	40.90	63,737	1,117	62,620	19,017
Indiana Harbor Belt	120	.....	.....	754,671	70,462	615,960	2,565	623,678	26,797	1,339,461	177.48	—584,790	10,686	—595,477	—596,815
International & Great Northern	1,159	1,152,727	310,888	1,575,976	247,602	423,798	27,486	776,796	62,204	1,543,510	97.93	32,467	25,000	7,202	9,612
Kanawha & Michigan	176	384,834	62,641	465,968	130,487	162,697	2,812	189,279	15,112	500,388	107.38	—34,420	26,056	—60,476	—76,450
Kansas City, Mexico & Orient	272	118,739	22,355	148,616	41,697	55,570	3,981	96,721	9,026	206,994	139.27	—58,378	7,700	—66,078	—50,074
Kansas City, Mexico & Orient of Texas	465	122,841	24,632	154,847	80,028	58,186	4,227	87,194	6,047	235,682	152.20	—80,835	6,925	—87,760	—38,731
Kansas City Terminal	27	.....	.....	137,842	17,661	29,655	.....	60,816	3,455	114,459	83.04	23,383	27,350	—3,967	—52,215
Lake Erie & Western	741	988,198	72,937	1,115,312	156,143	450,996	19,117	490,967	29,324	1,146,003	102.75	—30,691	36,293	—67,057	—68,128
Lake Superior & Ishpeming	34	255,329	278	288,716	23,552	17,274	215	52,082	3,136	96,259	33.34	192,457	6,183	186,274	41,415
Lake Terminal	12	.....	160	121,058	23,484	26,858	.....	75,217	44	125,602	103.75	—4,544	5,761	—10,304	14,221
Lehigh & Hudson River	96	261,784	4,130	274,090	29,980	44,031	1,701	146,395	8,742	231,349	84.40	42,740	8,600	34,139	—33,967
Lehigh & New England	229	424,245	1,510	444,770	64,967	76,434	2,497	155,152	12,734	311,708	70.08	133,062	15,453	117,609	80,933
Lehigh Valley	1,435	5,322,759	775,350	6,607,630	1,252,712	2,062,837	87,754	3,698,075	179,578	7,322,627	110.82	—714,997	206,000	—921,012	—1,707,506
Long Island	398	624,801	2,110,537	3,001,281	333,364	436,854	22,111	1,186,318	56,132	2,054,941	68.46	946,340	101,136	845,155	48,798
Los Angeles & Salt Lake	1,168	1,292,690	531,431	1,985,934	144,606	405,374	44,642	779,112	50,175	1,491,457	75.10	494,478	97,924	396,571	217,198
Louisiana & Arkansas	302	260,874	52,479	325,659	84,424	46,558	4,645	110,297	9,390	256,604	78.79	69,055	18,561	50,495	75,333
Louisiana Ry. & Navigation Co.	343	255,563	46,859	321,863	92,639	52,276	8,037	155,898	11,056	319,906	99.39	1,957	14,000	—12,082	—33,473
Louisiana Western	207	290,823	120,928	442,376	100,911	76,667	6,370	118,146	15,699	320,277	72.39	122,100	20,320	101,419	—29,142
Louisville & Nashville	5,040	7,444,045	2,399,629	10,494,484	2,310,528	2,993,387	172,320	5,226,970	268,596	11,016,870	104.97	—522,386	302,611	—825,032	—2,186,247
Louisville, Henderson & St. L.	199	176,491	70,937	261,111	66,070	31,327	5,486	87,327	8,192	198,402	75.98	62,710	7,215	55,550	4,910
Maine Central	1,216	1,045,271	568,755	1,754,957	416,770	510,139	18,483	1,432,094	84,905	2,472,134	140.86	—717,177	95,742	—812,923	—742,120
Maryland, Delaware & Virginia	82	74,638	62,627	143,045	14,991	16,601	1,105	94,463	2,291	129,451	90.49	13,593	2,000	11,539	66,011
Michigan Central	1,862	4,638,544	2,433,159	7,873,447	1,340,551	2,521,777	85,190	3,542,231	144,980	7,768,777	98.67	104,670	246,500	—142,685	—1,954,215
Midland Valley	388	265,227	105,248	385,963	175,534	113,677	4,029	187,416	26,704	507,361	131.45	—121,397	7,183	—128,587	—171,623
Mineral Range	101	50,572	302	53,087	16,186	18,222	299	29,128	1,211	65,046	122.52	—11,959	4,100	—16,081	9,861
Minneapolis & St. Louis	1,646	1,020,992	237,002	1,328,867	388,741	365,630	19,692	801,416	40,301	1,615,994	121.61	—287,127	66,768	353,946	468,944
Minneapolis, St. Paul & Sault Ste. Marie	4,243	2,950,659	990,477	4,304,954	878,020	610,769	43,456	1,644,213	88,280	3,304,690	76.76	1,000,264	279,084	721,164	.....
Minnesota & International	194	58,776	35,267	100,443	28,031	18,732	573	46,608	3,748	97,690	47.47	2,753	6,054	—3,303	—3,506
Mississippi Central	164	57,711	28,905	90,848	58,761	14,605	2,481	38,069	9,451	123,448	135.88	—32,600	5,000	—37,600	—37,417
Missouri & North Arkansas	364	113,376	60,193	200,196	62,143	36,461	2,505	66,666	7,940	175,715	87.77	24,482	5,893	18,589	63,124
Missouri, Kansas & Texas	1,715	2,498,981	771,973	3,560,488	777,798	979,972	40,379	1,356,962	108,091	3,281,233	92.15	279,255	122,299	156,496	—376,999
Missouri, Kansas & Texas of Texas	1,739	1,150,046	742,434	2,119,584	771,123	418,971	35,930	1,293,784	100,618	2,640,452	124.57	—520,867	59,583	—580,675	—516,553
Kansas, Oklahoma & Gulf	329	173,060	27,860	211,065	49,047	46,992	3,336	96,133	8,712	204,371	96.82	6,694	8,000	—1,326	74,808
Missouri Pacific	7,299	6,487,154	2,105,947	9,262,786	1,840,890	2,172,760	159,240	3,820,736	260,177	8,306,727	89.67	956,058	279,294	675,864	—262,429
Mobile & Ohio	1,165	1,132,970	212,409	1,437,165	451,550	496,320	38,209	765,369	53,032	1,805,679	125.64	368,513	59,905	428,428	494,626
Monongahela	106	291,730	30,178	329,386	96,015	41,868	72,272	107,210	1,350	256,966	78.01	72,421	6,293	66,128	—74,486
Monongahela Connecting	7	.....	.....	254,661	34,144	34,926	562	119,605	6,608	195,845	76.90	58,817	13,371	45,446	53,876
Montour	56	143,477	1,185	150,693	45,140	53,158	1,137	40,699	7,403	149,896	99.47	797	2,613	—1,817	1,649
Morgan's La. & Texas R.R. & S.S. Co.	400	483,743	198,431	739,313	255,030	158,333	10,091	298,239	28,345	752,651	101.80	—13,338	42,938	—56,486	—178,557
Nashville, Chattanooga & St. Louis	1,247	1,416,519	503,651	2,059,015	626,081	734,713	73,614	1,285,933	78,234	2,803,670	136.17	—744,655	42,500	—787,212	—960,372
Nevada Northern	165	150,930	11,318	168,954	30,834	23,013	883	35,701	5,107	95,657	56.61	73,308	8,370	64,947	39,754
New Jersey & New York	47	12,894	101,436	119,890	16,125	16,394	756	60,957	2,180	96,411	80.42	23,479	1,927	21,552	5,865
New Orleans Great Northern	284	146,384	67,057	222,945	55,510	43,775	5,572	88,544	13,303	207,085	92.89	15,860	12,188	3,696	—50,501
New York Central	6,069	19,127,547	9,501,428	32,579,679	5,303,689	11,523,866	346,422	14,978,283	863,513	33,570,941	103.04	—991,262	997,345	—1,990,036	—9,044,560
New York, Chicago & St. Louis	574	2,293,741	151,999	2,520,281	280,060	359,831	47,383	924,735	66,339	1,692,090	67.13	828,192	135,000	693,089	351,114
New York, New Haven & Hartford	1,981	4,740,713	4,924,886	11,011,890	2,506,400	3,276,732	94,464	7,679,434	485,142	14,263,861	129.63	—3,251,970	491,035	—3,743,731	5,460,185
New York, Ontario & Western	569	649,355	706,817	1,538,190	170,255	267,783	11,649	525,154	26,709	1,001,551	65.11	536,639	61,000	475,539	484,282
New York, Philadelphia & Norfolk	121	618,831	135,200	810,422	66,897	202,506	6,801	416,340	13,281	727,084	89.71	83,337	25,101	58,236	—92,389
New York, Susquehanna & Western	135	288,992	73,224	398,781	78,903	82,656	2,475	316,911	8,524	489,469	122.74	—90,688	18,674	—109,513	—102,190
Newburgh & South Shore	7	.....	.....	137,446	25,085	32,677	.....	84,689	4,609	147,039	106.99	—9,613	11,846	—21,459	10,585
Norfolk & Western	2,199	5,950,811	930,111	7,231,137	1,070,576	2,727,587	61,264	2,430,916	179,471	7,483,034	103.48	—251,897	425,000	—677,127	1,626,935
Norfolk Southern	944	365,563	215,162	620,032	174,915	145,296	14,364	318,179	31,506	684,535	110.40	—64,503	26,876	—91,357	—35,519
Northern Pacific	6,655	5,714,165	2,129,513	8,676,446	1,537,926	1,636,773	88,265	3,207,771	231,367	6,808,957	78.47	1,867,489	1,055,531	810,235	—997,995
Northwestern Pacific	536	373,451	349,584	814,138	106,847	77,250	7,276	290,573	14,424	499,019	61.29	315,119	30,571	284,507	53,436
Oregon Short Line	2,358	2,426,395	745,081	3,479,016	799,133	694,785	39,495	1,206,726	145,487	2,983,725	85.76	495,290	458,386	36,904	—1,043,850
Oregon-Washington R.R. & Nav. Co.	2,223	1,770,201	717,359	2,741,668	710,939	514,597	54,830	1,189,220	147,118	2,723,731	99.34	17,938	224,795	—206,863	—791,530

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY, 1920 (CONTINUED)

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of—Way and structures.	Maintenance of—Equipment.	Traffic.	Transportation.	General.	Total.					
Panhandle & Santa Fe	848	$539,934	$220,176	$800,860	$178,819	$221,398	$3,211	$293,785	$16,594	$713,807	89.13	$87,053	$19,041	$68,012	—$32,958
Kansas City Southern	779	1,217,163	269,955	1,586,722	281,003	390,823	36,008	705,777	84,951	1,498,138	94.46	88,585	73,300	15,154	206,386
Pennsylvania	7,259	34,168,953	12,823,790	51,209,821	7,692,509	14,377,396	422,260	23,579,326	1,195,575	48,152,575	94.02	3,057,246	1,582,226	1,469,616	—3,915,227
Peoria & Pekin Union	19	19,161	3,550	122,857	20,069	32,771	159	87,079	5,410	145,488	118.42	22,631	9,500	—32,131	14,744
Pere Marquette	2,230	2,631,381	843,630	3,803,826	542,014	747,537	42,717	1,412,772	104,742	2,852,932	75.00	950,954	61,708	889,206	—179,493
Philadelphia, Bethlehem & New England	10	.....	.....	118,121	13,974	13,834	475	75,867	1,316	105,466	89.28	12,666	1,335	11,321	12,385
Perkiomen Railroad	41	80,757	15,471	99,714	9,032	4,931	13	41,517	268	55,780	55.93	43,933	3,449	40,484	—17,956
Philadelphia & Reading	1,126	5,465,723	1,028,404	6,907,627	888,527	1,846,409	55,859	3,477,463	164,365	6,454,322	93.43	453,305	192,496	260,545	—1,321,684
Pittsburgh & Lake Erie	224	1,904,424	310,678	2,398,131	766,807	1,230,160	20,696	1,086,200	69,163	3,175,565	132.41	—777,434	65,571	—843,005	1,613,378
Pittsburgh & Shawmut	103	135,590	4,891	142,314	33,044	29,126	1,356	52,260	13,340	129,125	90.73	13,189	125	13,064	36,302
Pittsburgh & West Virginia	63	193,522	10,793	225,813	83,241	39,451	1,174	73,807	9,036	220,180	9,750	5,633	14,086	—8,453	54,296
Pittsburgh, Shawmut & Northern	209	114,218	5,991	122,811	33,702	56,025	1,123	61,874	5,369	158,094	128.72	—35,283	1,869	—37,151	—31,349
Port Reading	21	88,882	.....	108,666	20,511	5,442	18	52,174	779	78,923	72.62	29,742	12,238	17,504	35,078
Quincy, Omaha & Kansas City	255	60,170	25,762	97,328	69,930	21,019	732	58,812	2,190	152,618	156.80	—55,290	3,822	—59,113	—34,355
Richmond, Fredericksburg & Potomac	117	475,697	293,020	912,958	90,214	136,363	5,573	346,577	28,237	622,695	68.21	290,263	32,150	258,109	—282,414
Rutland	415	243,443	158,733	489,274	98,046	158,083	6,152	243,368	15,298	523,389	106.97	—34,115	18,935	—53,051	—106,123
St. Joseph & Grand Island	258	187,171	36,602	241,492	151,457	50,093	3,307	147,836	13,777	367,790	152.29	—126,298	13,089	—139,387	—159,636
St. Louis Merchants' Bridge Terminal	9	.....	.....	356,299	52,109	50,699	954	280,579	8,303	392,644	110.20	—36,345	18,949	—55,294	—65,963
St. Louis-San Francisco	4,757	4,671,076	2,267,371	7,404,411	1,931,490	2,048,866	86,804	4,051,655	298,257	8,402,412	113.47	—998,000	226,333	—1,224,587	—2,903,644
St. Louis Southwestern	968	1,515,068	213,765	1,797,332	255,643	279,457	50,629	507,580	56,166	1,155,393	64.28	641,938	87,028	554,910	380,671
St. Louis Southwestern of Texas	807	513,700	153,666	721,939	319,166	201,688	21,138	412,674	42,027	996,157	137.98	—274,217	23,000	—297,219	—186,770
St. Louis Transfer Ry	6	.....	.....	101,224	8,740	12,892	193	58,534	2,339	82,698	81.70	—18,526	273	18,253	—27,682
San Antonio & Aransas Pass	737	341,230	133,749	508,513	89,748	99,168	7,883	238,313	18,470	453,465	89.17	55,048	13,750	41,298	13,842
San Antonio, Uvalde & Gulf	317	74,923	45,156	129,081	34,770	22,469	2,711	148,104	8,090	216,145	167.44	—87,064	2,355	—89,444	—96,023
Seaboard Air Line	3,563	2,318,473	919,570	3,620,263	987,305	1,207,150	141,807	2,132,379	162,702	4,661,255	128.75	—1,040,992	135,000	—1,176,312	—1,771,056
Southern	6,971	8,125,554	3,374,801	12,584,800	1,720,488	2,603,432	185,349	6,047,330	365,262	11,043,406	87.75	1,541,394	426,731	1,112,233	—1,076,294
Alabama Great Southern	313	767,853	235,785	1,066,485	101,622	163,612	20,645	382,671	32,046	710,378	66.61	356,106	35,455	320,649	170,450
Cinc., New Orleans, Texas & Pacific	338	1,391,717	378,613	1,875,615	185,569	391,112	26,429	635,300	48,812	1,294,721	69.02	580,894	61,123	519,591	607,249
Northern Alabama	110	106,037	17,044	125,646	44,798	9,531	1,542	65,895	3,368	125,134	99.59	512	4,732	—4,219	15,294
Georgia Southern & Florida	402	226,236	117,211	386,863	86,067	112,066	7,620	245,150	14,175	469,934	121.47	—83,071	19,336	—102,407	—142,651
New Orleans & Northeastern	207	492,855	116,142	664,728	101,366	104,933	11,100	278,612	22,779	524,216	78.86	140,512	43,619	96,881	—9,651
Southern in Mississippi	278	64,450	48,597	125,645	85,057	28,403	3,018	87,989	6,735	211,201	168.09	—85,556	9,800	—95,356	—92,949
Southern Pacific	7,105	10,810,234	5,072,674	17,781,187	2,304,175	3,092,175	192,787	6,689,576	445,056	13,124,613	73.81	4,656,574	829,073	3,826,339	579,351
Southern Pacific Steamship Line	...	192,037	45,504	253,567	21,865	229,089	14,319	445,000	29,336	739,609	291.68	—486,042	18,800	—504,842	31,971
South Buffalo	11	63,568	.....	129,974	7,535	14,393	426	101,652	5,287	129,293	99.47	680	4,000	—3,320	—8,933
Spokane International	165	104,619	21,452	130,615	30,478	7,245	2,128	34,703	4,916	79,418	60.80	51,197	5,261	45,936	6,449
Spokane, Portland & Seattle	549	473,983	273,605	813,495	281,903	112,461	7,871	245,334	23,973	685,972	84.32	127,523	117,548	8,178	—250,156
Staten Island Rapid Transit	23	82,602	142,270	250,192	55,446	27,893	1,175	117,159	12,387	214,061	85.55	36,131	15,000	21,007	—15,617
Tennessee Central	292	154,161	62,484	229,856	51,313	48,966	4,550	119,574	10,467	234,797	102.15	—4,941	5,709	—10,654	19,813
Terminal R.R. Association of St. Louis	36	.....	.....	383,508	82,759	52,341	998	177,331	7,843	325,433	84.85	58,075	40,980	17,095	—64,391
Texarkana & Ft. Smith	93	115,811	24,122	155,584	26,042	19,551	4,965	71,980	9,343	131,791	84.70	23,793	80.70	15,690	34,455
Texas & New Orleans	469	585,154	186,694	870,129	222,004	226,666	11,325	294,206	22,166	798,212	91.73	71,916	22,332	49,518	—107,741
Texas & Pacific	1,946	2,083,240	992,124	3,323,116	606,842	665,236	32,879	1,342,275	102,338	2,788,320	83.91	534,796	89,150	445,261	—202,243
Toledo & Ohio Central	503	965,773	77,407	1,117,140	251,083	416,545	8,251	544,944	24,604	1,248,982	111.81	—131,841	45,179	—177,025	—226,915
Toledo, Peoria & Western	247	95,798	51,298	159,890	33,329	37,297	2,555	103,584	9,073	185,837	116.22	—25,947	8,500	—34,447	—13,743
Toledo, St. Louis & Western	454	920,793	40,703	1,003,643	233,104	221,462	18,010	396,072	18,777	887,426	88.42	116,217	31,000	85,217	28,439
Trinity & Brazos Valley	368	101,425	27,442	135,238	35,363	44,039	11,925	63,009	11,088	155,098	114.68	—19,860	7,210	—27,070	35,872
Ulster & Delaware	128	68,333	52,709	147,027	21,096	21,723	3,057	118,206	5,257	169,913	155.65	—22,886	5,000	—27,886	—18,027
Union R.R. (of Penna.)	45	.....	.....	854,332	91,610	298,589	283	486,023	8,272	884,777	103.56	—30,445	11,105	—41,549	—101,402
Union Pacific	3,614	7,047,045	2,127,447	10,161,766	2,502,430	2,347,968	127,350	3,356,960	359,162	9,041,937	88.97	1,119,830	888,430	231,385	—2,611,826
Utah Ry.	98	153,722	908	155,183	27,655	28,500	179	35,648	3,147	95,128	61.30	60,055	6,173	53,882	15,431
Vicksburg, Shreveport & Pacific	171	205,683	108,910	340,187	88,126	69,742	6,744	117,780	11,443	297,492	87.44	42,695	14,036	28,651	—33,922
Virginian	523	1,344,272	81,811	1,579,173	208,791	282,775	16,543	599,902	37,335	1,136,095	71.94	443,078	64,196	378,881	108,142
Wabash	2,472	3,530,509	1,043,836	5,006,889	991,775	1,369,812	122,598	2,728,935	187,062	5,438,161	108.61	—431,271	130,880	—562,246	—1,028,305
West Jersey & Seashore	361	319,800	1,279,800	1,690,919	241,127	263,156	13,027	663,677	24,193	1,214,838	11.84	476,081	51,648	424,419	104,634
Western Maryland	797	1,350,662	137,628	1,604,633	393,743	510,136	52,694	743,672	49,537	1,768,186	110.19	—163,553	50,000	—213,553	—394,625
Western Pacific	1,011	1,069,939	286,011	1,434,443	208,299	176,363	26,863	478,013	33,115	954,263	66.53	480,180	62,669	417,478	157,178
Western Ry. of Alabama	133	111,071	83,347	213,019	41,299	54,315	6,782	97,449	10,327	214,227	100.56	—1,208	7,175	—8,383	—46,134
Wheeling & Lake Erie	511	1,406,271	81,309	1,631,324	223,136	341,537	14,650	694,550	36,291	1,314,179	8,056	317,145	69,418	247,727	—110,424
Wichita Falls & Northwestern	328	143,844	48,812	212,552	68,954	21,614	613	108,916	8,920	209,016	98.33	3,566	10,742	—7,223	4,704
Wichita Valley	256	73,524	41,544	122,781	40,088	17,998	.....	49,861	1,293	109,240	88.97	13,542	5,707	7,832	—26,044
Yazoo & Mississippi Valley	1,382	1,923,657	482,504	2,534,078	597,271	589,429	26,371	964,632	59,695	2,246,511	88.65	287,566	82,146	204,732	—268,564
SEVEN MONTHS OF CALENDAR YEAR 1920															
Alabama & Vicksburg	141	$1,189,387	$476,439	$1,844,398	$295,888	$352,189	$37,352	$670,890	$69,438	$1,446,970	78.45	$397,428	$96,340	$301,009	$237,574
Ann Arbor	301	2,222,560	383,610	2,818,343	380,300	604,562	48,612	1,359,741	101,867	2,495,280	88.53	323,063	120,900	202,098	4,646
Arizona Eastern	379	1,781,665	368,312	2,348,207	468,965	345,400	22,724	733,612	127,182	1,718,212	73.17	629,995	184,712	445,152	46,634
Atchison, Topeka & Santa Fe	8,721	75,659,329	29,674,459	117,553,023	17,154,674	27,351,166	1,273,945	40,665,325	2,086,163	88,494,987	75.28	29,058,035	5,997,651	23,054,309	6,589,902
Atlanta & West Point	93	865,396	622,841	1,720,288	227,072	304,858	44,531	665,855	68,299	1,339,039	77.83	381,249	56,583	324,665	—12,741

REVENUES AND EXPENSES OF RAILWAYS

SEVEN MONTHS OF CALENDAR YEAR 1920

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
					Maintenance of—										
		Freight.	Passenger.	Total (inc. misc.)	Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.					
Atlanta, Birmingham & Atlantic	639	$2,429,012	$550,827	$3,299,360	$751,503	$934,682	$128,740	$1,721,509	$127,707	$3,664,653	111.07	—$365,293	$114,691	—$481,029	$360,344
Atlantic City	177	737,647	1,660,124	2,536,393	349,786	300,034	16,876	1,366,552	16,783	2,044,720	80.61	491,613	98,703	392,949	—140,563
Atlantic Coast Line	4,891	27,720,974	10,890,311	42,636,535	6,422,917	9,001,568	500,455	20,040,635	937,338	37,196,220	87.22	5,446,315	1,900,000	3,537,446	—1,191,554
Atlantic & St. Lawrence	166	1,236,817	250,688	1,654,489	450,471	422,196	19,225	1,072,212	83,841	2,102,520	127.07	—448,032	110,905	—558,992	44,187
Baltimore & Ohio Chicago Terminal	90	.....	35	1,155,615	331,731	400,453	8,236	963,716	74,637	1,812,304	156.82	—656,689	208,929	—865,625	—175,618
Baltimore & Ohio	5,153	92,261,527	16,221,583	118,859,144	17,920,162	37,557,701	1,484,764	58,425,605	3,340,192	119,622,662	100.64	—763,518	3,863,998	—4,657,877	—3,436,531
Baltimore, Chesapeake & Atlantic	87	507,253	237,112	806,133	77,293	343,018	7,846	534,439	26,451	989,047	122.69	—182,914	25,900	—208,814	42,004
Bangor & Aroostook	658	2,813,834	571,302	3,649,292	848,011	866,891	27,925	1,438,674	126,933	3,361,662	92.11	287,636	183,614	104,015	41,308
Belt Railway of Chicago	31	.....	.....	2,242,997	277,901	419,518	4,287	1,403,221	56,063	2,160,990	96.34	82,007	156,540	—74,532	—7,902
Bessemer & Lake Erie	225	6,050,145	267,957	6,531,285	843,451	2,271,503	93,035	2,319,697	199,158	5,772,456	88.38	758,829	106,800	652,003	—884,494
Bingham & Garfield	36	1,052,866	11,605	1,080,372	226,328	252,239	12,155	244,693	31,111	773,409	71.59	306,963	51,975	254,981	424,188
Birmingham Southern	31	247,387	.....	343,269	31,582	55,071	6,875	210,206	24,704	328,439	95.67	14,830	12,280	2,521	—72,189
Boston & Maine	2,291	27,854,248	1,283,838	45,911,303	7,086,845	10,075,007	314,929	26,582,238	1,523,755	45,813,055	99.78	98,248	1,638,361	—1,587,793	—2,545,113
Brooklyn Eastern District Terminal	9	538,110	.....	595,667	121,640	214,369	1,235	399,841	29,812	766,898	128.74	—171,231	43,592	—214,823	35,856
Buffalo & Susquehanna R. R. Corp	296	1,506,769	48,153	1,587,879	351,182	689,176	15,892	585,246	70,994	1,712,482	107.84	—174,604	38,900	—163,505	25,044
Buffalo, Rochester & Pittsburgh	589	9,209,044	992,663	10,645,269	1,843,914	3,914,510	110,955	5,165,372	280,903	11,330,460	106.44	—685,190	225,000	—910,843	—49,993
Canadian Pacific (Lines in Maine)	233	1,269,040	375,032	1,727,731	378,254	438,224	21,068	1,120,804	24,730	1,983,079	114.77	—255,347	85,400	—340,748	—62,959
Carolina, Clinchfield & Ohio	282	3,478,744	259,698	3,846,752	507,399	950,493	85,741	1,501,976	115,562	2,859,669	74.33	987,082	149,333	837,478	198,507
Central New England	301	3,173,162	170,040	3,537,065	1,160,117	1,009,247	22,895	2,394,475	115,625	4,707,993	133.10	7,170,928	127,613	—1,298,599	—1,401,748
Central of Georgia	1,924	8,975,329	3,751,035	14,528,772	2,635,810	3,243,171	332,704	6,692,666	526,824	13,464,580	92.67	1,064,191	552,489	511,338	—395,101
Central Railway of New Jersey	686	18,589,114	5,166,123	25,874,136	3,062,319	7,881,609	189,039	13,563,154	647,854	25,521,883	98.63	352,254	1,859,043	—1,506,920	—3,230,265
Central Vermont	413	2,593,403	636,078	3,644,828	607,245	1,087,624	62,988	2,585,581	132,699	4,491,375	133.22	—846,547	121,800	—968,414	—368,475
Charleston & Western Carolina	342	1,514,873	367,368	1,996,587	421,422	430,541	34,954	1,072,257	35,195	1,994,371	99.88	2,216	81,375	—79,279	—181,716
Chesapeake & Ohio	2,518	36,453,238	6,025,377	46,145,621	6,611,199	13,122,675	378,732	19,360,040	991,852	40,681,519	88.16	5,464,101	1,648,670	3,814,326	—3,369,099
Chicago & Alton	1,050	10,671,849	3,619,687	15,969,720	2,432,072	4,354,763	233,724	7,448,768	433,691	14,987,613	93.84	982,107	465,945	514,995	—338,244
Chicago & Eastern Illinois	1,131	10,869,659	2,902,746	15,804,185	2,129,564	5,363,654	158,702	7,172,486	451,656	15,363,865	97.21	440,320	670,000	—232,249	—562,152
Chicago, Det. & Canada Gr. Trk. Jct	62	657,748	128,803	940,688	121,644	187,608	10,122	531,823	25,380	876,774	93.21	63,913	31,127	32,765	—378,904
Chicago & Erie	269	5,422,708	490,119	6,566,525	759,533	1,202,471	98,827	3,481,839	210,465	5,776,155	87.96	790,370	280,454	509,510	—38,310
Chicago & North Western	8,296	56,336,242	20,520,441	86,940,835	14,250,371	19,658,809	687,704	41,694,766	2,151,195	79,249,395	91.15	7,691,440	4,750,621	2,935,487	—4,380,539
Chicago, Burlington & Quincy	9,371	67,595,356	19,471,339	98,638,678	17,753,568	21,834,969	890,024	42,917,764	2,650,467	86,460,340	87.65	12,178,337	4,736,626	7,424,382	—5,168,417
Chicago, Great Western	1,496	8,395,232	3,098,616	12,950,982	3,163,512	3,568,975	227,531	6,319,771	375,657	13,776,025	106.37	—825,043	470,101	—1,293,719	—1,970,116
Chicago, Indianapolis & Louisville	654	5,606,412	1,792,857	8,359,996	1,024,815	2,586,304	174,125	3,705,576	211,832	7,808,336	93.41	551,660	336,917	214,405	—596,495
Chicago Junction	12	.....	.....	1,780,582	365,318	426,957	1,794	1,953,492	66,663	2,814,223	158.05	—1,033,642	22,129	—1,055,771	—557,125
Chicago, Milwaukee & St. Paul	10,629	62,183,143	17,154,721	91,084,991	15,336,155	22,171,116	781,437	43,268,549	2,698,373	84,848,999	93.15	6,236,090	4,592,050	1,611,434	1,647,768
Chicago, Peoria & St. Louis	249	1,127,198	184,131	1,411,153	253,892	470,676	26,816	707,732	67,509	1,526,555	108.18	—115,403	47,700	—163,118	361,239
Chicago, Rock Island & Gulf	461	2,694,291	695,874	3,717,820	555,012	564,174	57,274	1,484,236	91,755	2,760,775	74.26	957,045	112,201	844,658	677,327
Chicago, Rock Island & Pacific	7,626	48,508,717	18,403,865	74,618,833	14,389,856	19,529,584	839,110	34,229,129	1,759,749	71,082,577	96.03	2,936,255	3,069,803	—138,952	—4,681,318
Chicago, St. Paul, Minn. & Omaha	1,749	11,099,997	4,603,294	17,314,170	2,405,236	3,204,980	172,508	7,935,842	511,578	14,326,601	82.74	2,987,570	910,838	2,072,720	596,975
Chicago, Terre Haute & S. E	374	2,673,942	168,261	2,927,430	454,043	1,062,564	32,589	1,307,362	80,283	2,948,508	100.72	—21,079	133,500	—154,579	—134,733
Cincinnati, Indianapolis & Western	321	1,815,059	382,456	2,428,752	391,652	871,996	55,225	1,112,666	121,066	2,559,827	105.39	—131,075	91,795	—222,875	93,278
Cincinnati Northern	249	1,622,377	137,142	1,858,820	372,561	439,244	23,631	722,857	40,054	1,598,325	85.98	260,495	71,810	188,677	—128,163
Cleveland, Cinc., Chicago & St. Louis	2,408	32,027,089	10,561,263	47,850,283	6,328,901	11,184,851	664,279	20,488,559	1,080,986	40,020,693	83.63	7,829,590	1,532,803	6,292,625	—405,975
Colorado & Wyoming	43	140,134	6,466	540,826	96,792	127,756	2,040	283,562	28,800	538,950	99.65	1,816	35,000	—33,124	—135,083
Copper Range	142	375,922	84,334	491,401	152,270	118,632	13,339	257,095	19,937	561,273	114.21	—69,872	44,522	—114,393	—73,664
Colorado & Southwestern	1,099	9,134,152	1,539,204	7,990,826	1,438,039	2,018,125	76,989	2,846,626	295,841	6,738,951	86.83	1,251,876	400,937	848,985	—122,091
Delaware & Hudson	858	19,037,808	1,828,433	22,170,928	2,603,954	6,845,354	192,904	11,542,810	980,851	22,335,948	100.74	—165,020	562,642	—728,107	—1,789,914
Delaware, Lackawanna & Western	956	27,558,721	7,151,648	40,201,807	4,951,354	9,575,092	532,061	20,177,600	975,164	36,826,385	91.61	3,375,422	2,522,917	851,330	—6,163,916
Denver & Rio Grande	2,585	14,554,374	4,005,584	20,271,759	2,996,539	4,883,921	249,122	7,213,785	535,492	16,283,789	80.33	3,987,970	897,000	3,075,586	925,275
Denver & Salt Lake	255	1,117,109	235,597	1,431,165	485,999	542,572	5,899	842,470	56,659	1,933,600	135.11	—502,434	69,332	—571,837	49,599
Detroit & Mackinac	376	713,507	244,065	1,062,283	196,072	303,982	18,324	535,539	50,543	1,103,706	103.89	—41,423	94,726	—136,149	—22,856
Detroit, Grand Haven & Milwaukee	195	1,795,941	293,500	2,420,636	409,606	567,631	38,030	1,634,209	88,076	2,738,599	113.13	—317,963	23,024	341,550	—625,066
Detroit, Toledo & Ironton	454	2,388,977	100,924	2,669,220	651,593	597,388	40,684	1,374,395	147,683	2,811,742	105.33	—140,507	62,153	—203,498	228,666
Duluth & Iron Range	298	4,760,011	161,320	5,337,678	766,517	795,685	6,337	1,385,771	121,958	3,080,493	57.71	2,257,186	278,688	1,977,949	81,555
Duluth, Missabe & N	406	8,106,604	349,534	9,274,923	1,334,412	1,072,341	19,263	2,066,448	147,644	4,652,630	50.16	4,622,292	483,482	4,138,776	—2,940,262
Duluth, Winnipeg & Pac	178	1,148,735	189,116	1,370,307	233,419	273,224	24,204	652,881	60,250	1,243,983	90.78	126,323	73,536	52,727	11,626
Duluth, South Shore & A	614	1,935,049	701,719	2,999,401	617,860	553,236	35,622	1,490,914	75,595	2,815,071	93.85	184,330	166,000	18,085	7,951
East St. Louis Connecting	3	.....	.....	722,197	94,809	204,108	1,947	563,434	26,086	890,384	123.28	—168,187	18,064	—186,251	—102,209
El Paso & Southwestern Co	1,027	6,022,421	1,547,111	8,134,069	1,396,643	1,500,249	106,718	2,209,072	275,366	5,550,361	68.24	2,583,708	622,904	1,960,182	54,621
Elgin, Joliet & E	833	8,125,228	73	9,221,341	1,007,627	2,241,037	36,143	3,677,362	187,132	7,146,619	77.50	2,074,722	245,698	1,828,615	—972,371
Erie	1,989	41,901,090	7,574,331	55,447,728	8,229,633	19,493,203	650,293	30,093,717	1,671,757	60,616,824	109.32	—5,169,096	1,729,401	—6,920,607	—4,946,016
Florida East Coast	764	4,443,638	2,486,449	8,080,694	938,501	1,246,460	60,870	2,922,905	174,335	5,436,576	67.27	2,644,118	316,499	2,325,050	1,650,499
Fonda, Johnstown & Gloversville	88	270,664	495,974	804,050	91,268	77,080	3,499	284,598	64,597	521,042	64.81	283,008	35,175	247,833	33,225
Ft. Smith & Western	253	712,035	212,144	996,220	245,933	248,573	29,900	426,720	53,497	1,013,114	103.51	—16,894	35,000	—52,454	—90,914
Ft. Worth & D. City	454	4,167,399	2,250,925	6,814,017	1,115,191	1,564,533	45,426	2,997,605	225,129	5,977,154	87.72	836,863	159,300	676,945	—957,254
Galveston, Harr. & S. A	1,383	9,255,520	3,174,645	13,563,137	4,361,322	3,407,980	224,116	5,157,738	439,256	13,741,888	101.31	—178,751	581,197	—771,883	—2,739,026
Georgia	328	2,451,905	967,011	3,712,176	497,881	813,611	87,634	2,050,571	136,750	3,587,951	96.65	124,226	41,650	82,555	—533,663
Georgia & Florida	405	544,772	172,239	798,025	436,250	174,804	35,556	579,283	58,988	1,284,882	161.07	—486,857	43,881	—530,986	—315,146
Grand Trunk Western	350	6,219,679	1,494,782	8,458,920	1,113,206	2,447,233	129,906	4,302,549	300,715	8,343,486	98.63	115,433	335,695	—220,183	—1,723,130
Great Northern	8,175	44,570,527	11,051,914	65,021,221	14,571,591	12,960,352	594,753	26,983,674	1,422,336	57,444,728	88.34	7,576,493	5,396,846	2,167,685	—3,630,388

REVENUES AND EXPENSES OF RAILWAYS

SEVEN MONTHS OF CALENDAR YEAR 1920 (CONTINUED)

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.					
Green Bay & Western	252	$503,330	$128,212	$684.121	$152,091	$165,814	$8,557	$308,727	$19,639	$654,789	95.71	$29,332	$47,992	—$18,661	—$24,249
Gulf & Ship Island	307	1,140,626	334,859	1,625,318	457,710	382,324	37,149	664,706	84,489	1,629,505	100.26	—4,188	133,242	—137,613	—65,848
Gulf, Colorado & Santa Fe	1,916	9,300,401	3,488,336	14,043,839	3,739,640	3,000,013	166,055	6,136,829	370,318	13,388,103	95.33	655,735	606,914	47,472	—542,609
Gulf, Mobile & Northern	469	1,526,160	387,017	2,081,435	731,740	512,104	70,903	928,369	98,701	2,341,818	112.51	—266,383	93,876	—354,706	—252,214
Hocking Valley	350	6,748,437	720,405	7,972,581	1,027,097	3,127,249	64,875	3,204,761	231,543	7,655,437	96.02	317,144	484,204	—167,060	—625,405
Houston & Texas Central	887	4,025,487	1,625,509	6,247,078	1,677,535	1,283,485	94,516	2,582,169	176,437	5,813,258	93.05	433,820	306,318	122,414	—351,989
Houston East & West Texas	190	1,157,774	371,393	1,652,667	772,327	238,228	19,917	744,266	40,876	1,815,625	109.86	—162,958	66,843	—231,539	—431,632
Illinois Central	4,799	55,235,308	14,737,304	77,426,153	13,966,915	20,764,674	677,774	32,899,133	1,740,696	70,663,902	91.27	6,762,251	4,156,273	2,590,213	—169,272
Illinois Terminal	24	531,676	.....	563,699	27,061	62,495	5,008	135,640	34,446	264,651	46.94	299,048	7,982	291,056	—11,673
Indiana Harbor Belt	120	.....	.....	4,420,238	824,673	1,370,858	17,180	3,391,112	143,269	5,747,092	130.01	—1,326,855	74,928	—1,401,929	—1,124,716
International & Great Northern	1,159	7,000,180	1,896,789	9,837,676	2,119,139	2,516,675	136,643	5,236,380	342,569	10,385,261	105.56	—547,585	220,003	—77,172	—90,585
Kanawha & Michigan	176	2,245,567	357,941	2,734,454	546,441	1,113,980	19,261	1,128,564	94,668	2,902,915	106.16	—168,461	176,056	—344,521	—336,426
Kansas City, Mexico & Orient	272	700,567	125,805	890,944	305,856	306,732	23,354	494,199	64,515	1,194,657	134.08	—303,712	53,915	—357,676	29,709
Kansas City, Mexico & Orient of Texas	465	741,936	152,135	975,965	447,467	325,734	23,113	550,908	62,806	1,410,027	144.47	—434,062	45,269	—479,660	—32,329
Kansas City Terminal	27	.....	.....	853,276	138,334	211,865	.....	458,450	18,118	843,505	98.85	9,771	198,371	—188,605	—180,952
Kansas City Southern	779	7,763,521	1,665,547	10,290,015	1,613,326	2,298,469	209,829	4,031,261	423,783	8,578,461	83.36	1,711,554	470,317	1,239,717	655,032
Lake Erie & Western	741	5,262,360	446,664	6,098,296	910,878	2,201,755	109,785	2,742,184	182,116	6,144,466	100.76	—46,170	276,543	—323,240	53,926
Lake Superior & Ishpeming	34	718,630	1,690	811,796	133,599	124,495	1,527	176,378	18,897	454,896	56.03	356,900	33,706	323,194	240,453
Lake Terminal	12	.....	1,470	731,543	117,756	194,324	.....	499,472	403	811,955	110.99	—80,412	40,972	—121,384	—57,268
Lehigh & Hudson River	96	1,341,761	25,372	1,461,110	190,484	304,839	11,716	754,460	51,971	1,313,467	89.89	147,642	60,551	87,062	—119,942
Lehigh & New England	229	2,402,113	14,462	2,520,941	331,196	540,354	36,292	926,095	89,311	1,921,006	76.20	593,935	96,385	503,551	207,765
Lehigh Valley	1,435	30,233,170	4,051,917	37,577,071	6,319,132	11,687,456	447,203	22,679,342	899,353	42,210,186	112.32	—4,633,116	1,382,000	—6,016,264	—7,520,649
Long Island	398	3,542,163	8,654,657	13,667,891	1,994,330	2,835,137	105,197	7,629,670	383,263	13,049,281	95.47	618,610	718,502	—102,095	—2,221,994
Los Angeles & Salt Lake	1,168	6,945,637	3,190,571	11,209,025	1,419,357	2,123,571	181,346	4,038,550	261,716	8,377,870	74.74	2,831,154	563,860	2,266,482	637,801
Louisiana & Arkansas	302	1,884,275	350,159	2,346,247	465,941	321,232	31,433	774,339	55,639	1,648,483	70.26	697,764	120,535	577,114	690,144
Louisiana Ry. & Navigation Co	343	1,853,440	296,877	2,287,678	590,606	399,813	40,656	1,036,506	78,658	2,146,239	93.81	141,439	98,000	43,318	149,644
Louisiana Western	207	1,996,473	754,134	2,959,067	659,668	531,344	44,996	142,426	95,595	2,092,050	70.70	866,957	158,420	707,557	—39,968
Louisville & Nashville	5,040	48,940,679	14,151,297	68,817,535	12,473,043	18,892,334	1,172,341	31,712,862	1,668,439	66,271,219	96.29	2,546,316	2,061,494	481,705	—4,605,822
Louisville, Henderson & St. Louis	199	1,154,773	410,087	1,714,821	415,841	218,725	33,906	597,444	58,894	1,324,810	77.25	390,011	22,928	367,082	71,731
Maine Central	1,216	7,186,658	2,743,893	10,909,889	2,269,759	2,767,209	87,217	6,620,290	340,882	12,102,214	113.00	—1,192,325	644,191	—1,836,680	—926,562
Maryland, Delaware & Virginia	82	405,054	202,629	643,860	69,261	226,713	4,787	494,690	16,917	812,368	126.17	—168,507	14,000	—182,562	90,587
Michigan Central	1,862	28,555,934	12,277,226	46,257,451	6,599,646	12,444,497	504,045	21,181,648	935,865	42,453,154	91.77	3,804,297	1,732,500	2,067,163	—6,300,208
Midland Valley	388	1,730,521	692,620	2,552,708	667,365	518,112	23,894	1,023,815	117,631	2,350,817	92.09	201,890	50,284	151,239	—229,297
Mineral Range	101	355,461	2,103	371,876	103,534	131,205	2,068	206,814	7,739	451,360	121.37	—79,484	26,200	—105,706	—29,545
Minneapolis & St. Louis	1,646	6,803,347	1,542,454	9,009,815	1,661,285	2,411,088	120,272	4,723,550	254,407	9,172,929	101.81	—163,114	411,447	—575,632	311,266
Minneapolis, St. Paul & Sault Ste. Marie	4,243	17,113,445	4,829,428	24,499,441	4,545,681	4,661,593	261,198	11,081,490	641,794	21,363,669	87.20	3,135,772	1,949,042	1,184,537	—1,242,347
Minnesota & International	194	478,132	211,522	742,632	180,025	131,634	3,587	355,682	25,652	696,578	93.79	46,053	37,399	8,651	—44,061
Mississippi Central	164	356,077	149,816	550,480	238,278	234,981	14,374	289,071	58,058	834,762	151.64	—284,283	29,615	—314,059	—225,137
Missouri & North Arkansas	364	682,044	310,686	1,104,542	405,014	240,043	19,703	495,965	56,436	1,217,160	110.20	—112,619	41,946	—154,598	294,856
Missouri, Kansas & Texas	1,715	14,764,589	4,710,160	21,542,434	4,189,498	6,154,325	256,969	7,906,620	710,507	19,336,549	89.75	2,205,885	771,733	1,431,297	—140,884
Missouri, Kansas & Texas R.R. of Texas	1,755	8,828,734	5,077,187	15,503,133	4,149,771	3,263,571	205,094	8,979,340	619,328	17,383,526	112.12	—1,880,393	416,977	—2,300,170	—2,534,535
Kansas, Oklahoma & Gulf	327	1,110,867	161,732	1,344,029	318,841	361,752	16,572	695,904	63,533	1,457,931	108.47	—113,902	77,566	—191,652	345,800
Missouri Pacific	7,299	44,588,751	11,805,700	62,838,291	12,303,902	14,035,301	932,948	25,782,676	1,702,815	55,089,845	87.66	7,748,446	1,831,242	5,900,992	3,474,053
Mobile & Ohio	1,101	8,066,678	1,298,335	10,193,952	2,108,135	3,340,907	216,674	4,988,094	337,063	10,997,406	107.88	—803,455	421,512	—1,225,287	—387,052
Monongahela	108	1,739,557	176,622	1,968,024	753,737	405,871	5,223	750,699	53,196	1,968,728	100.03	—704	41,465	—42,169	—537,371
Monongahela Connecting	7	.....	.....	1,767,829	200,301	252,214	3,922	801,975	44,951	1,303,362	73.72	464,447	120,726	343,741	473,922
Montour	56	665,874	8,997	701,965	192,296	330,157	7,941	249,433	50,861	846,637	120.61	—144,672	16,946	—161,617	—4,677
Morgan's La. & Texas R.R. & S.S. Co.	401	4,120,725	1,242,368	5,828,450	1,444,147	1,074,286	75,254	1,921,351	175,239	4,708,977	80.78	1,119,472	322,017	795,230	348,666
Nashville, Chattanooga & St. Louis	1,247	9,612,747	2,989,462	13,854,230	2,411,764	3,847,099	379,976	6,215,056	380,023	13,287,500	95.90	566,731	304,500	260,821	236,598
Nevada Northern	166	996,308	70,140	1,108,514	194,799	183,133	6,129	283,432	33,468	701,821	63.31	406,692	60,065	346,627	133,890
New Jersey & New York	47	91,014	569,205	112,746	79,498	120,969	8,911	433,998	16,137	659,512	92.53	53,234	15,364	37,858	38,942
New Orleans Great Northern	284	1,048,671	339,821	1,454,663	316,883	303,772	28,832	592,698	69,439	1,314,646	90.37	140,022	82,885	57,099	49,324
New York Central	6,069	110,233,944	51,102,550	191,946,709	30,035,185	53,908,704	1,886,672	95,531,173	5,216,441	189,849,790	98.91	2,096,919	7,479,182	—5,404,622	—28,124,580
New York, Chicago & St. Louis	574	13,512,967	676,531	14,760,917	1,637,684	2,583,616	276,596	6,061,948	460,495	11,059,147	74.92	3,701,770	465,000	3,234,696	381,493
New York, New Haven & Hartford	1,981	28,845,048	27,590,810	66,416,829	10,841,796	16,279,144	392,243	36,754,019	2,358,112	67,903,004	102.24	—1,486,177	2,481,035	—3,977,007	—7,329,094
New York, Ontario & Western	569	3,850,005	1,644,963	6,634,128	1,129,086	1,630,316	70,080	3,259,382	181,908	6,270,771	94.52	363,356	217,483	145,871	—283,700
New York, Philadelphia & Norfolk	121	3,266,768	664,643	4,320,275	435,125	1,247,677	65,397	2,634,201	92,974	4,586,563	106.16	—266,288	161,407	—427,842	—952,130
New York, Susquehanna & Western	135	1,691,561	433,333	2,415,794	341,054	545,619	18,402	1,838,292	63,660	2,807,021	116.19	—391,227	146,631	—541,011	—450,951
Newburgh & South Shore	7	.....	.....	912,272	110,269	228,478	.....	587,112	20,630	956,490	104.84	—44,218	58,666	—102,884	—165,934
Norfolk & Western	2,201	36,046,017	5,196,560	43,928,135	7,024,552	16,193,289	379,422	19,725,254	1,073,267	44,569,065	101.45	—640,930	2,695,000	—3,338,668	—8,851,626
Norfolk Southern	916	3,041,991	1,093,484	4,484,634	979,697	862,171	81,981	2,152,413	192,673	4,270,048	95.21	214,586	125,540	88,323	260,953
Northern Pacific	6,651	40,937,594	11,657,201	58,950,421	12,632,645	11,373,289	39,253	1,758,756	105,947	3,236,233	77.51	939,160	184,119	754,536	331,347
Northwestern Pacific	537	2,091,642	1,557,204	4,175,393	783,765	531,237	535,418	22,916,781	1,486,989	49,851,079	84.56	9,099,341	5,218,531	3,872,006	—3,389,154
Oregon Short Line	2,351	17,576,966	4,220,964	24,237,864	3,531,944	4,055,635	211,057	7,750,759	858,786	16,931,655	69.85	7,306,209	2,016,083	5,289,395	1,114,607
Oregon-Washington R.R. & Nav. Co.	2,222	12,452,725	4,182,476	18,535,491	3,195,751	3,326,682	265,544	7,767,197	862,128	15,662,394	84.49	2,873,097	1,277,098	1,595,628	—201,074
Panhandle & Santa Fe	783	3,414,705	1,027,994	4,793,686	1,102,602	1,591,663	27,654	2,022,787	114,871	4,857,904	101.34	—64,217	141,156	—205,308	359,748
Galv. Wharf Co	13	.....	.....	816,960	225,885	23,025	2,751	255,929	16,861	649,673	79.52	167,287	119,200	43,704	79,269
Pennsylvania	7,259	185,995,680	70,945,281	285,459,916	49,177,155	93,158,877	2,624,409	148,427,830	7,498,096	306,198,998	107.26	—20 739,082	10,422,055	—31,197,945	—43,996,407
Peoria & Pekin Union	19	182,198	27,556	860,260	116,628	231,724	1,492	561,294	32,302	943,442	109.66	—83,182	6,650	—149,682	205,419

REVENUES AND EXPENSES OF RAILWAYS

SEVEN MONTHS OF CALENDAR YEAR 1920 (CONTINUED)

Name of road.	Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
Pere Marquette	2,230	$14,946,451	$3,780,415	$21,202,353	$2,939,336	$4,914,662	$279,855	$9,907,059	$700,859	$18,807,302	88.70	$2,395,052	$443,962	$1,949,738	—$1,741,932
Philadelphia, Bethlehem & N. E.	10	.....	.....	733,400	111,557	114,987	3,128	522,588	10,612	762,872	104.02	—29,472	7,515	—36,987	—56,322
Perkiomen Railroad	41	541,384	71,450	654,387	56,146	30,229	97	278,423	2,029	367,070	56.09	287,317	17,243	270,074	—8,573
Philadelphia & Reading	1,126	39,038,643	6,076,742	48,189,539	5,181,580	13,291,211	350,788	23,693,532	1,103,507	43,768,202	90.82	4,421,337	1,160,946	3,257,767	362,803
Pittsburgh & Lake Erie	224	12,284,962	1,717,134	15,254,075	3,441,772	7,090,138	126,248	6,543,028	413,475	17,627,720	115.56	—2,373,644	821,853	—3,195,958	—4,807,817
Pittsburgh & Shawmut	103	862,869	35,846	906,671	182,109	222,515	9,728	344,935	44,111	803,398	88.61	103,272	828	102,444	270,688
Pittsburgh & West Virginia	63	944,864	65,527	1,134,725	348,970	360,442	10,933	457,034	63,709	1,313,138	115.72	—178,414	99,964	—279,966	215,634
Pittsburgh, Shawmut & Nor.	209	733,323	44,443	798,644	194,455	379,814	11,996	403,841	55,877	1,046,008	130.97	—247,365	13,199	—261,080	—48,303
Port Reading	21	722,579	.....	950,179	118,337	71,319	134	567,300	11,784	768,874	80.91	181,305	57,017	124,289	—341,941
Quincy, Omaha & Kansas City	255	459,151	171,895	728,813	311,608	151,311	3,128	431,263	14,661	911,605	125.08	—182,793	26,407	—209,246	—118,714
Richmond, Fredericksburg & Potomac	117	3,053,484	2,117,215	6,453,246	573,614	1,026,190	47,660	2,576,090	177,050	4,471,362	69.29	1,981,885	208,420	1,773,287	—1,428,594
Rutland	415	1,678,580	813,967	3,084,525	648,642	917,112	36,294	1,633,918	100,044	3,348,528	108.55	—264,004	130,158	—394,176	—372,546
St. Joseph & Grand Island	258	1,357,013	256,849	1,762,639	628,095	303,795	15,689	967,449	90,270	2,018,970	114.54	—265,332	82,453	—338,822	—337,879
St. Louis Merchants' Bridge Terminal	9	.....	2,892	2,134,982	331,208	411,457	5,791	1,595,909	54,404	2,396,769	112.26	—263,787	74,830	—338,740	130,152
St. Louis-San Francisco	4,757	33,304,544	13,513,005	49,927,686	8,312,428	11,508,232	445,078	21,209,792	1,545,924	42,935,494	85.99	6,992,191	1,606,513	5,379,649	—1,608,524
St. Louis Southwestern	960	9,664,804	1,232,969	11,501,499	1,574,162	2,040,042	276,501	3,103,576	326,857	7,356,138	63.95	4,145,361	407,517	3,737,703	2,538,791
St. Louis S. W. of Texas	807	3,683,497	856,577	5,012,833	1,627,969	1,642,008	107,075	2,802,048	226,067	6,402,759	127.78	—1,389,927	169,468	—1,559,762	—641,962
St. Louis Transfer	6	.....	.....	749,506	59,521	115,386	1,335	378,418	16,671	571,332	76.23	178,174	1,583	176,592	71,646
San Antonio & Aransas Pass	736	1,688,119	672,249	2,643,413	764,800	683,409	47,442	1,511,061	129,843	3,135,017	118.59	—491,604	102,500	—594,393	29,415
San Antonio, Uvalde & Gulf	317	525,110	280,688	855,775	253,745	151,198	15,709	524,490	40,740	985,882	115.20	—130,106	15,555	—145,781	—80,533
Seaboard Air Line	3,563	18,810,562	5,831,126	28,297,327	5,497,478	7,351,608	663,296	14,698,754	972,732	29,493,682	104.22	—1,196,355	1,035,000	—2,236,457	—3,958,484
Southern	6,974	56,082,454	19,816,068	85,334,481	11,531,708	16,392,225	1,137,983	38,597,205	2,270,941	70,786,082	82.95	14,548,399	2,820,870	11,716,272	6,761,274
Alabama Great Southern	313	4,430,133	1,315,260	6,246,181	654,691	1,355,219	125,619	2,316,305	159,578	4,659,608	74.59	1,586,572	221,797	1,363,770	657,527
Cinc., New Orleans, Texas & Pacific	338	8,086,694	2,240,286	11,224,057	1,290,427	2,857,799	181,682	4,144,040	265,528	8,817,808	78.56	2,406,249	376,109	2,028,922	1,014,298
Northern Alabama	110	726,180	99,665	871,508	210,462	52,681	10,988	420,855	17,738	712,724	81.78	158,784	30,436	128,297	157,001
Georgia Southern & Florida	402	1,822,449	878,680	3,014,957	460,416	712,567	51,280	1,528,983	84,476	2,856,218	94.73	158,739	131,336	25,751	—46,884
New Orleans & Northeastern	207	3,090,505	724,189	4,291,953	648,336	892,659	73,508	1,762,589	124,293	3,533,180	82.32	758,773	284,999	473,353	348,665
Southern in Mississippi	278	591,519	333,790	1,034,021	393,895	128,163	20,718	622,591	41,555	1,260,923	121.94	—226,902	68,600	—295,519	—200,074
Southern Pacific	7,095	65,139,184	30,257,932	107,594,417	16,270,621	21,469,251	1,008,816	40,805,688	2,552,215	84,560,925	78.59	23,033,493	6,378,011	16,640,893	3,967,193
Southern Pacific S.S. Lines	...	2,709,778	164,407	2,995,553	129,612	2,361,018	80,609	3,205,774	179,255	5,956,269	198.83	—2,960,715	78,793	—3,039,509	—2,491,435
South Buffalo	11	354,963	.....	787,611	49,282	100,068	3,696	516,673	14,977	684,697	86.93	102,915	28,000	74,915	—14,991
Spokane International	159	719,167	125,902	671,070	142,093	72,231	16,407	269,827	35,518	539,105	80.33	331,965	35,630	296,023	160,447
Spokane, Portland & Seattle	549	3,212,837	1,220,547	4,843,471	1,021,999	632,169	48,427	1,620,011	160,137	3,541,588	73.12	1,301,884	624,361	675,383	—23,746
Staten Island Rapid Transit	23	534,224	632,470	1,288,801	242,301	240,644	8,712	139,027	69,543	1,300,227	100.88	—11,426	105,000	—116,721	—200,185
Tennessee Central	292	1,161,012	338,352	1,631,628	307,260	355,898	32,465	792,030	71,939	1,559,455	95.57	72,173	38,681	32,849	312,416
Terminal R.R. Association of St. Louis	36	.....	8,483	2,496,659	465,301	439,339	6,920	1,110,610	57,610	2,107,460	84.41	389,199	264,430	124,739	159,742
Texarkana & Ft. Smith	93	856,764	155,238	1,118,259	150,174	116,961	15,318	363,471	38,536	686,221	61.37	432,039	80,010	351,973	289,054
Texas & New Orleans	469	3,584,433	1,142,459	5,332,094	1,391,237	1,534,657	59,152	1,855,973	138,304	5,225,357	97.99	106,738	176,464	—75,530	—355,949
Texas & Pacific	1,946	13,745,246	6,775,882	22,470,689	4,127,961	4,810,614	252,975	9,591,783	634,360	19,705,306	87.70	3,765,382	796,550	1,963,547	—5,256
Toledo & Ohio Central	484	5,430,959	461,531	6,249,753	1,003,421	2,030,759	66,225	3,145,534	153,801	6,422,295	102.76	—172,542	347,293	—519,865	—448,916
Toledo, Peoria & Western	247	629,173	347,820	1,081,392	179,796	248,099	15,606	582,138	46,559	1,072,138	99.14	9,255	59,500	—50,245	91,968
Toledo, St. Louis & Western	454	5,505,263	232,331	6,071,659	1,204,717	1,237,109	75,859	2,463,753	103,615	5,084,675	83.74	986,984	217,000	769,690	414,290
Trinity & Brazos Valley	368	788,700	146,392	1,000,035	427,779	324,872	14,054	472,426	62,729	1,301,533	130.15	—301,498	55,609	—357,215	40,863
Ulster & Delaware	128	367,821	158,788	718,424	120,349	145,119	17,150	508,360	45,223	839,948	116.91	—121,524	35,000	—156,522	14,290
Union R.R (of Penn.)	45	.....	.....	5,295,289	596,346	1,499,682	1,940	3,341,085	56,733	5,495,784	103.78	—200,495	60,478	—260,973	—452,444
Union Pacific	3,614	46,023,355	12,062,153	66,491,357	11,390,856	13,393,588	549,066	20,657,874	2,084,044	49,887,859	75.02	16,603,499	3,404,330	13,196,468	—3,580,913
Utah Ry.	98	1,026,001	2,503	6,034,594	124,354	207,940	1,262	241,870	18,937	594,364	98.49	440,230	46,573	393,657	196,835
Vicksburg, Shreveport & Pacific	171	1,557,699	671,281	2,444,074	373,869	435,174	44,701	906,730	75,994	1,862,330	76.19	581,744	92,631	488,952	—251,442
Virginian	523	7,459,287	451,134	8,804,616	1,077,404	1,802,619	50,325	3,475,569	196,768	6,595,071	74.90	2,209,546	406,482	1,803,055	960,479
Wabash	2,472	21,069,022	5,923,238	30,170,998	5,686,843	8,724,972	608,769	16,415,177	1,067,706	32,117,521	108.44	—2,546,522	898,870	—3,447,595	—5,228,485
West Jersey & Seashore	361	1,852,300	4,502,397	6,878,710	1,675,422	1,536,759	70,672	3,822,952	170,146	7,329,027	106.55	—450,316	360,798	—811,246	582,001
Western Maryland	766	8,532,121	640,760	9,886,897	2,058,620	3,567,824	256,565	4,189,538	343,703	10,522,149	106.42	—635,252	336,400	—971,652	—670,619
Western Pacific	1,019	6,261,324	1,387,015	8,116,075	1,337,727	1,265,366	175,308	2,735,912	236,296	5,919,338	72.93	2,196,736	416,906	1,779,515	1,158,844
Western of Alabama	133	880,647	520,591	157,667	228,706	344,320	43,687	602,074	57,386	1,301,539	82.54	275,129	46,025	229,097	—65,068
Wheeling & Lake Erie	511	7,456,314	449,933	8,721,031	1,295,713	2,096,801	82,203	3,780,057	208,953	7,487,624	85.85	1,233,407	458,118	773,990	150,101
Wichita Falls & N. W.	328	1,046,511	329,428	1,485,884	424,715	222,533	7,769	795,220	80,561	1,530,684	103.01	—44,799	76,067	—121,180	—2,441
Wichita Valley	256	602,342	266,063	932,073	235,378	111,142	281	411,281	11,051	769,050	82.51	163,023	38,708	124,282	78,625
Yazoo & Mississippi Valley	1,381	12,368,852	3,333,029	16,731,295	3,633,958	4,009,489	165,487	6,443,412	405,811	14,695,026	87.82	2,036,269	560,213	1,471,642	—704,355
SIX MONTHS OF CALENDAR YEAR 1920															
Western Maryland	761	7,181,459	503,132	8,282,264	1,664,878	3,057,688	203,871	3,445,866	294,167	8,753,963	105.70	—471,699	286,400	—758,099	—375,995
Western Pacific	1,022	5,191,386	1,101,004	6,681,631	1,129,428	1,089,003	148,446	2,257,899	203,180	4,965,075	74.31	1,716,556	354,238	1,362,038	1,001,666
Western Ry. of Alabama	133	769,577	437,244	1,363,649	187,407	290,005	36,905	504,625	47,058	1,087,313	79.74	276,336	38,850	237,479	—18,933
Wheeling & Lake Erie	511	6,050,044	368,624	7,089,707	1,072,577	1,755,264	67,553	3,085,507	172,663	6,173,445	87.07	916,262	388,700	526,263	260,526
Wichita Falls and North Western	328	902,667	280,617	1,273,302	355,762	200,920	7,156	686,304	71,541	1,321,667	103.80	—48,365	65,325	—113,957	—7,145
Wichita Valley	256	551,717	227,660	836,113	192,861	114,549	846	378,744	13,856	701,052	83.85	135,062	33,001	101,950	90,170
Yazoo & Mississippi Valley	1,381	10,445,195	2,848,526	14,197,217	3,036,688	3,420,060	139,115	5,478,781	346,116	12,448,515	87.68	1,748,702	477,467	1,266,910	—435,792

Traffic News

The Chicago, Rock Island & Pacific has reopened its Spokane (Wash.) traffic office in the Symons Building.

A. U. Tadlock, who was recently traffic manager of the El Paso, Tex., Chamber of Commerce, has become traffic manager of the Jonesboro, Ark., Chamber of Commerce and the Northeast Arkansas Traffic Association.

The loss and damage committee of the Atchison, Topeka & Santa Fe System will hold its semi-annual meeting at Houston, Tex., beginning on October 4. Matters of special interest to traffic, freight claim and operating officers will be discussed.

W. G. MacEdward, formerly on the Erie, and afterwards for 15 years general freight and passenger agent of the Detroit & Mackinac, has been appointed secretary of the Bay City (Mich.) Board of Commerce, succeeding J. C. McCabe.

The New Jersey Industrial Traffic League was organized at Newark on September 23. The president is E. E. Ebert, and vice-president, Robert Wallace, both of Jersey City. The secretary is C. J. Fagg, traffic commissioner of the Newark Board of Trade. The next meeting will be held on October 7.

Railroad officers, apple-growers and shippers of the Northwest will meet in conference at Yakima, Wash., on September 27, for a conference and discussion of the increased freight rates. It is the contention of the apple shippers that the heavy increase in freight rates is discriminatory and will work an injustice on the fruit industry.

The Southern Pacific announces the restoration of former schedules of its Morgan Line of steamers with sailings from New York to Galveston every Tuesday, Thursday and Saturday, and from New York to New Orleans on Wednesday and Saturday, with corresponding regular departures in the opposite direction. The Southern Pacific line comprises 16 steamers.

The West Coast lumbermen have been invited by railroad officers to attend a further conference on the subject of freight rate relief at Chicago on October 6. While the freight rate relief was refused at the recent conference held at Portland, Ore., the railroad men announced that at the meeting of traffic officers on October 6, a review of the lumber rates would be made and the tariffs covering the rates would be arranged for reissuing. It was further stated that the lumbermen would be given an opportunity to be heard at that time.

Plans for the organization of a divisional office of the Southern Hardwood Traffic Association were made at a meeting held at St. Louis, Mo., on September 22. J. H. Townsend, secretary-manager of the association, Memphis, Tenn., explained the work of the organization in detail at the meeting, and related how the association had been of great service to the lumber industry in correcting traffic situations which have adversely affected the lumber business. It is stated that the association will establish an office at St. Louis.

The Minnesota Central Cooperative Live Stock Shippers' Association instigated action on September 17 to have the railroads furnish transportation both ways to men in charge of a single carload of live stock. The law in Minnesota provides that carriers shall furnish free transportation both ways to men in charge of carload shipments of live stock going to market. When the government took over the roads this practice was changed so that only those with more than one car would get passes both ways, while those with a single car were allowed transportation to market only.

Objections to the plan proposed by the Chicago packers for the disposition of their stock yard interests to a holding company to be formed by F. H. Prince & Co. of Boston were filed by the Department of Justice in the Supreme Court of the District of Columbia on September 28. The department in its petition said that the proposed holding company to take over controlling interests in substantially all of the stock yards in the United States, together with terminal railways, which are in turn owned or controlled by the stock yards, would constitute in itself a combination in violation of the Sherman and other anti-trust laws.

Forty-five men and women charged with illegal use of commutation tickets were served with injunctions by the New York Supreme Court at White Plains, N. Y., on September 24, on complaint of the New York Central. The defendants named in the injunctions live in Poughkeepsie, Newburgh, Tarrytown, Ossining, White Plains, Brewster and Peekskill. The restraining orders forbid the renting of tickets on pain of contempt proceedings. The attorney for the railroad told the court that in Poughkeepsie alone the ticket profiteers have rented out family 50-trip and regular 60-trip tickets extensively, making large profits.

Shippers of peaches in western New York complain loudly of a shortage of refrigerator cars and declare that large losses are impending. Dr. E. H. Porter, the state commissioner of foods and markets, attributes the shortage "to the injudicious manner in which the new transportation act is being administered by the Interstate Commerce Commission." The commissioner charged that the effort of the commission to supply the whole country with cars really meant "robbing the strong eastern roads for the benefit of the smaller roads of the west and south." He declared that "many fine New York state peaches will be wasted at the very door of the eastern city markets, while other peaches are moved half way across the continent to supply the demand."

At New York City automobile long-distance freight carriers are now so numerous and so well settled in their various enterprises, that the New York Tribune has advertisements of twenty of them, grouped in a "Ship by Truck" department. These twenty concerns carry freight to Albany, N. Y. (142 miles); Allentown, Pa. (90); Boston, Mass. (232); Bound Brook, N. J. (33); Bridgeport, Conn. (56); Camden, N. J. (90); Chester, Pa. (100); Danbury, Conn. (50); Newark, N. J. (9); Nyack, N. Y. (25); Patchogue, N. Y. (56); Philadelphia, Pa. (90); Pittsfield, Mass. (150); Reading, Pa. (126); Rockaway, N. Y. (20); Scranton, Pa. (134); Troy, N. Y. (148); Washington, D. C. (225); Waterbury, Conn. (88); White Plains, N. Y. (23). Some of these advertisements name one or more intermediate towns. All of those mentioned promise daily service except those to Pittsfield, Scranton, Troy, Washington and Wilmington. The Pittsfield line is run twice a week.

The West Coast Lumbermen's Association is taking its freight rate grievances to the public in the form of a series of display advertisements in the daily newspapers. The first advertisement of the series, occupying a full page, appeared in the leading newspapers of the Douglas fir region on September 20. It was addressed to the employees of the lumber industry and to the public, and stated that Douglas fir had always been farther away from the important markets than Southern pine. The former, because of paying higher wages than are paid in the South, and because of its distance from the principal markets, was at a distinctive disadvantage. Now that the problem of transportation and the cost thereof has become greatly emphasized, Douglas fir is still farther from the Eastern market. The struggle to overcome distance is set forth in figures of initial cost, plus freight charges, in detail form. The article, in closing, states that, "if we may be allowed to make a forecast, we will state that at the present freight rate lumber will not move in the same quantities that it has in the past."

New Assigned-Car Rule

The Interstate Commerce Commission on September 28 issued Service Order No. 18 rescinding its order of April 15 amending the car distribution rules to provide that private cars and cars placed for railroad fuel should be designated as assigned cars in accordance with the decisions of the commission in several cases.

The commission finds that the rule is being applied by particular carriers in a manner contrary to the principles approved in the Hocking Valley and the Traer cases, thereby causing confusion and undue prejudice. It is, therefore, ordered that, effective October 1, 1920, private cars and cars placed for railroad fuel loading, in accordance with the decisions of the Interstate Commerce

Commission in *RR. Com. of Ohio, et al.*, v. *H. V. Ry.*, 12 I. C. C., 398, and *Traer* v. *Chicago & Alton, et al.*, 13 I. C. C., 451, shall be designated as assigned cars. All other cars are to be designated as unassigned cars. Railroads may not assign cars for their own fuel and fail to count such cars against the mine's distributive share unless the entire output of such mine is taken by such a carrier for a period of not less than six consecutive months.

The order also provides that any contract or arrangement for the purchase of coal made by a carrier on or before November 1, 1920, which terminates at the expiration of the coal year ending March 31, 1921, shall be regarded as a compliance with the rule hereinbefore prescribed. Rules and practices, with respect to car service, are superseded only in so far as they conflict with the provisions of this order.

The order states that because of a shortage of cars and a congestion of traffic, and because of the inability of the carriers to secure an adequate supply of coal without resorting to the confiscation of commercial coal, an emergency exists which requires immediate action.

Coal Production

The production of soft coal during the week ended September 18 was the largest, with one exception, for any week this year since January. Because of the strike in the anthracite region, however, the total production of hard and soft coal combined was much below the average for August. The output of bituminous is estimated at 11,614,000 net tons, according to the weekly bulletin of the Geological Survey. One factor in the increased output was the release of cars from the anthracite region of Pennsylvania for use in the adjacent bituminous fields. Production during the first 222 working days of the year has been 380,832,000 net tons, which is 14,000,000 tons less than that for 1917 and 43¼ million tons less than that for 1918, but over 51 million tons ahead of 1919. Although the figures of production of anthracite for the week ended September 18 show no general resumption of activity in the anthracite region, there was a marked improvement during the week of September 18 to 25. The estimated production of anthracite for the calendar year to September 18 is 59,859,000 net tons as compared with 59,041,000 in the corresponding period of 1919.

Dumpings at Lake Erie ports during the week of September 18 recovered partially from the Labor Day depression, but were still short of the maximum attained in the last week of August. The total quantity dumped is reported as 1,007,833 tons. The cumulative lake movement from the opening of the season now stands at 13,977,000 tons as against 20,417,000 in 1918 and 17,863,000 in 1919. The volume of the tidewater movement declined slightly during the week at New York, Philadelphia and Charleston. At the Chesapeake Bay ports the rate increased.

Every effort is being put forth by the bituminous coal operators of the country, according to a statement issued by the National Coal Association, to attain a weekly output of over 12,000,000 tons of soft coal from now until December 1, so as to forestall the possibility of a shortage anywhere in the country during the winter. During October of last year, preceding the miners' strike, production averaged 12,081,750 tons a week. In the week of October 25, of that year, 13,092,000 tons were produced. The highest production for any week during the present stringency was 11,813,000, during the week of August 14. The average for the last two months has been approximately 10,100,000 tons a week.

"To insure the winter supply of coal for the Northwest," the statement says, "the railroads have promised to expedite the movement of cars, so as to provide 4,000 a week, for shipments to Lake ports. The New England situation has been cleared up so that danger of a coal famine this winter no longer exists and the immediate wants of New England consumers can be supplied. The outstanding difficulty in New England is lack of railroad fuel for storage for the winter's use. This is now being straightened out. * * * The situation will be appreciably improved if the Interstate Commerce Commission's order, restricting the use of open top cars to the movement of coal, is rigidly enforced. At this time thousands of cars, which ought to be carrying coal, are being used to haul other commodities."

Commission and Court News

Interstate Commerce Commission

The hearing on the export bill of lading set for October 4 before Commissioner Woolley of the Interstate Commerce Commission has been cancelled and reassigned for November 15 at Washington.

The commission has suspended until February 2, of a Kanawha & Michigan tariff that proposes the cancellation of through rates on bituminous coal to points in Florida, Georgia, North Carolina, South Carolina, Virginia and West Virginia, leaving combination rates applicable, which results in an increase of approximately 70 cents a ton.

The commission has announced an investigation of the situation created by the refusal of the Arkansas Corporation Commission to permit carriers in that state to increase rates on roadbuilding material and other things similar to those permitted by the Interstate Commerce Commission for interstate traffic. A hearing will be held before Examiner Brown on October 4 at Little Rock, Ark.

The commission has received a brief by J. H. Painter and V. L. Brooks as attorneys for protestants against the application of the Eastern Texas Railroad Company for authority to abandon its line. The brief asserts that the road was not constructed principally as a logging road, but under a charter to conduct the business of a common carrier for 25 years from November, 1908, and that the fact, if fact it be, that its business will not provide a profit for the remaining years of that term furnishes no ground for permitting it to repudiate the obligations of its contract, especially in the absence of a showing that its revenues for the entire 25 years will be insufficient. It is stated that the present rundown condition of the railroad is due solely to improvident and uneconomical business managemet.

The commission has made public a tentative report of its Attorney-Examiner M. A. Pattison recommending that the rule of the telegraph companies, limiting their liability for negligence in the transmission or delivery or non-delivery of unrepeated interstate messages to the amount paid for transmission and of repeated messages to $50 or 50 times the rate charged, be found to be unreasonable. As a reasonable rule to be prescribed for the future, the examiner recommends that the maximum liability in case of a message for the transmission of which the unrepeated rate was charged should be not less than $500 and for a repeated message transmitted at the repeated rate $5,000. Provision, however, should be made, he says, for the transmission of valued messages under a liability limit, to the value stated by the sender, at the repeated rate plus one-tenth of one per cent of the stated value in excess of $5,000.

Court News

Safety Appliance Act—Trainman's Attempt to Stop Runaway Cars

Because of a defective coupler, a train broke in two on a grade in a yard, allowing the detached portion to run down the grade. A member of the switching crew, who was then standing on the ground in a safe position, climbed on one of the detached cars which had started down grade, and set the brake in an unsuccessful attempt to prevent a collision. He was injured in the collision which followed and sued the railroad and the Director General of Railroads. The Circuit Court of Appeals, Sixth Circuit, holds that it was not error to charge that failure to comply with the Safety Appliance Act was a proximate cause of the injury and that the switchman's act, which was in the line of his duty and apparently not imminently dangerous, could not be held the proximate cause. The railroad, being under federal control, was not liable for the negligent injury.—Erie v. Caldwell, 264 Fed. 947.

Equipment and Supplies

Locomotives

THE RHODESIAN RAILWAY has ordered 12, 4-8-2 type locomotives from the American Locomotive Company.

THE WELLER CONSTRUCTION COMPANY, Washington, D. C., has ordered one four-wheel general utility locomotive from the Bell Locomotive Works.

THE ILLINOIS CENTRAL, reported in the *Railway Age* of September 3 as inquiring for 25 switching locomotives, has ordered this equipment from the Baldwin Locomotive Works.

THE PARIS-ORLEANS, reported in the *Railway Age* of August 27 as inquiring for 50 locomotives, has ordered 50, 4-6-2 type locomotives from the American Locomotive Company.

THE UNITED FRUIT COMPANY, New York, has ordered 5, 2-8-0 type locomotives from the Baldwin Locomotive Works and one eight-wheel plantation locomotive from the Bell Locomotive Works.

THE TOLEDO TERMINAL has ordered 2 Consolidation type locomotives from the American Locomotive Company. These locomotives will have 22 in. by 28 in. cylinders and a total weight in working order of 201,000 lb.

THE GREAT NORTHERN has included in its budget for 1921, 500 refrigerator cars and contemplates the purchase of 1,000 freight cars and 50 locomotives. This road is also continuing to convert its oil-burning engines to coal burners.

THE CANADIAN PACIFIC, reported in the *Railway Age* of July 2 as inquiring for 15 locomotives, has ordered 15 Mikado type locomotives from the American Locomotive Company. These locomotives will have 25½ in. by 32 in. cylinders and a total weight in working order of 320,000 lb.

THE ST. LOUIS SOUTHWESTERN, reported in the *Railway Age* of September 24 as inquiring for 10 Consolidation type locomotives, has given an order to the Baldwin Locomotive Works for 10 locomotives. This is in addition to the order for 10 locomotives previously placed by this company with the same builders.

Freight Cars

THE STANDARD SERVICE CORPORATION, New York, is inquiring for 80 cane cars of 30 tons' capacity.

THE GULF COAST LINES, reported in the *Railway Age* of July 16 as inquiring for 500 box, 300 gondola, 150 flat cars and 50 tank cars, has withdrawn its inquiry for these cars.

THE MISSOURI, KANSAS & TEXAS, reported in the *Railway Age* of August 6 as inquiring for 2,000 automobile cars and 1,500 gondola cars, has withdrawn its inquiry for these cars.

THE UNITED STATES SMELTING, REFINING & MINING COMPANY, Boston, Mass., is inquiring for 23 steel underframe box cars of 50 tons capacity; 2 composite gondolas of 50 tons capacity, and 2 automobile cars of 40 tons capacity.

Miscellaneous

THE SOUTHERN PACIFIC, TEXAS & LOUISIANA LINES has authorized the expenditure of $700,000 for the purchase and installation of shop tools. The purchase of one locomotive crane, a ditcher and other track equipment has also been authorized.

RAILROAD BUYING comprised approximately 25 per cent of the business secured by west coast lumbermen and the west coast mills for the week ending September 18. In the general trade for rail delivery, there were 758 carloads represented in new orders, and 253 carloads of special cuttings for the transportation system.

Supply Trade News

The Easton Car & Construction Company, Easton, Pa., has opened a branch office in the Railway Exchange building, Chicago.

C. G. Cope has been appointed district sales manager for Philadelphia (Pa.) territory of the **Minwax Company, Inc.,** New York, with offices at 507 Schubert Building, Philadelphia.

Carl J. Schmidlapp and **Allan A. Ryan** have been elected members of the board of the **Chicago Pneumatic Tool Company,** New York. Mr. Schmidlapp takes the place of A. F. Cassidy and Mr. Ryan fills a vacancy that had existed in the board for some time.

John B. Canfield, who was associated with the Harley Company, Springfield, Mass., as special representative and counsel, left the service of that company on August 1, to become New York representative, with offices in the Grand Central Terminal, of **Brown & Co.,** Pittsburgh, Pa., manufacturers of fine iron and steel.

F. F. Fitzpatrick, president of the **Railway Steel-Spring Company,** New York, has received the decoration of Officer of the Crown of Italy. This order was founded in 1868 by King Victor Emmanuel II and is given as a reward for signal merit to military officers and others who have performed distinguished service service in Italy.

The Norton Company, Worcester, Mass., has opened a branch office for its grinding machine decision in room 304 Penway building, 241 North Pennsylvania avenue, Indianapolis, Ind., under the direction of **Walter F. Rogers,** district representative. The establishment of this branch office will in no way affect the distribution of Norton grinding wheels. These will be handled as in the past by the **Vonnegut Hardware Company.**

Charles H. McCormick has been appointed western representative of the railroad department of the **Standard Paint Company,** New York, with headquarters in the Plymouth Building, Chicago. Mr. McCormick began railway work with the Michigan Central in the mechanical department at Bay City, Mich., and later was transferred to Jackson, Mich., and Detroit, at the latter place serving as chief clerk to the superintendent of motive power for six years. He later went to the Standard Heat & Ventilation Company, at New York and Chicago, for four years and was with the Hegeman-Castle Corporation, at New York and Chicago, for four years previous to entering the service of the Standard Paint Company.

The East St. Louis Locomotive & Car Company, capitalized at about $5,000,000, will establish a railroad car and locomotive building and repair plant at East St. Louis, Ill. The plant, it is stated, is ultimately to employ 3,000 men. **R. W. Crawford,** formerly head of a car building plant at Streator, Ill., is president of the company. Options have been obtained on three sites, according to J. N. Fining, secretary of the East St. Louis Chamber of Commerce, and it is planned to begin work at once on several buildings. The plant, with buildings and tracks, is expected to cover 150 acres and to have an output of 75 to 120 freight cars per day. The company expects to be in a position to begin repair work on cars this winter.

The **Whiting Foundry Equipment Company,** Harvey, Ill., and the **American Foundry Equipment Company,** New York, have been consolidated in a new organization to be known as the **Whiting Corporation.** The new company will be capitalized at $5,000,000. **J. H. Whiting,** president of the Whiting Foundry Equipment Company, becomes chairman of the board, and **V. E. Minich,** president of the American Foundry Equipment Company (Sand Mixing Machine Company) and of the Foundry Equipment Manufacturers' Association, will

be president. As the lines of manufacture of the component companies do not overlap, it is the intention to maintain all present manufacturing facilities. The Whiting plant at Harvey will retain the manufacture of cranes, cupolas, hoists, tumbling mills, core ovens and all other items of the established Whiting line, together with sand blast equipment and dust arresters. Sand cutting machines, charging trucks, core machines and steel flasks will comprise the bulk of work at the new American plant at 2935 West Forty-seventh street, Chicago, under the direction of **E. A. Rich, Jr.** Molding machines, jolts, flask specialties and pattern mounting materials will continue to be manufactured at the York, Pa., plant of the American company in charge of **R. S. Buch.** The plans include maintaining and enlarging the present offices of the American Fundry Equipment Company, 366 Madison avenue, New York, as the eastern sales and export office of the combined lines.

Freight Car Production—Eight Months' Figures

Figures of production reported by 23 leading car building companies associated with the Railway Car Manufacturers' Association show that the car building industry in August was working at a slightly higher percentage of capacity than in July. The number of new freight cars delivered in August totaled 3,056 for domestic service and 1,184 for export, as compared with 2,583 and 380, respectively, in July. The deliveries of passenger cars totaled 21 for domestic service and 13 for export. Car repairs totaled 2,818, as against 2,491 in July. At the end of August there were 49,442 freight cars for domestic service on order and undelivered, 861 passenger cars and 27,031 heavy repairs.

For the purpose of comparison there are shown herewith the figures for the several months of the year and the cumulative figures for the eight months. Extended comment is not necessary in view of the fact that the tendencies, as evidenced by the July figures, were covered in detail in the editorial entitled "Car Building in First Seven Months of 1920," on page 511 of last week's issue. The names of the 23 builders co-operating in the figures of the association were also given on the same page.

The figures are as follows:

TABLE I—CARS DELIVERED

	Freight cars		Passenger cars	
	Dom.	For.	Dom.	For.
January	4,482	1,904	1	9
February	3,774	1,039	4	..
March	2,796	1,994	11	28
April	2,127	1,912	15	..
May	2,630	1,387	..	..
June	2,608	708	..	21
July	2,583	380	18	27
August	3,056	1,184	21	13
	24,056	10,508	70	98

TABLE II—CARS ON ORDER AND UNDELIVERED

(Figures for end of month)

	Freight cars			Passenger cars		
	Dom.	For.	Total	Dom.	For.	Total
December, 1919	24,816	10,720	35,536	407	110	517
January, 1920	27,282	9,381	36,663	311	103	414
February, 1920	29,706	8,389	38,095	282	103	385
March, 1920	33,061	7,854	41,455	522	80	602
April, 1920	42,869	7,180	50,049	586	88	674
May, 1920	47,761	6,338	54,099	732	110	842
June, 1920	48,171	7,792	55,963	796	97	893
July, 1920	50,275	8,212	58,487	811	88	899
August, 1920	49,442	7,574	57,016	861	75	936

TABLE III—FREIGHT CAR REPAIRS

	Delivered during month	Delivered Jan. 1 to end of month	On order and undelivered at end of month
May	2,296	10,442	20,130
June	2,541	12,983	24,092
July	2,491	15,474	23,541
August	2,818	19,269	27,031

Obituary

Edwin Thacher, formerly chief assistant engineer of the Louisville Iron & Bridge Company, Louisville, Ky., and, from 1901 to 1912, a partner in the Concrete Steel Engineering Company, New York, died at his home in New York on September 21, at the age of 80. He was graduated from Rensselaer Polytechnic Institute in 1863, and for several years did railroad engineering work. He was the inventor of numerous improvements in civil engineering.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has let contracts to Jerome A. Moss, general contractor, Chicago, for extensions and alterations to its passenger station at Ponca City, Okla., and the building of locker room and lavatory facilities at its roundhouse at Chanute, Kan. The work at the first point is estimated to cost approximately $30,000 and will comprise waiting room, plumbing and heating facilities, while the second contract will total approximately $12,000.

CHICAGO, BURLINGTON & QUINCY.—This company has awarded a contract to T. S. Leake & Co., Chicago, for the construction of a brick and stucco passenger and freight station, 24 ft. by 100 ft., at Albany, Mo.

CHICAGO, ROCK ISLAND & PACIFIC.—This company has awarded a contract for the construction of a freight house, 40 ft. by 260 ft., at Enid, Okla., to T. S. Leake & Co., Chicago. The office section of this building will be of brick construction, with a tile roof, and the freight sheds will be frame, with a covering of corrugated iron.

This company is building a three-story office building at the corner of Sixty-third and La Salle streets, Chicago. This building, which will be 60 ft. by 84 ft., is to be of reinforced concrete construction, and will be completed about December 15.

CHICAGO UNION STATION COMPANY.—This company has let a contract to the Underground Construction Company, Chicago, for building the substructure on the south side of the new viaduct at Roosevelt Road, Chicago. The Underground Construction Company has also been awarded a contract for the installation of conduit lines between Harrison and Polk streets with the W. J. Newman Company, Chicago, and will construct the sub-sidewalk to be laid in connection with the widening of Canal street, between Harrison and Van Buren streets.

CHICAGO & NORTH WESTERN.—This company has awarded a contract to G. A. Johnson & Son, Chicago, for the construction of a one-story brick passenger station at Glen Rock, Wyo.

DETROIT, TOLEDO & IRONTON.—This company is contemplating the construction of a tie treating plant in the vicinity of the 400,000-acre tract of timber land recently purchased by the Ford interests in the upper peninsula of Michigan. This road has also applied to the Interstate Commerce Commission for a certificate of necessity and convenience for a 15-mile extension, leaving its main line near Flat Rock, Mich., or Trenton, and extending to the Ford furnace plant on the River Rouge.

GREAT NORTHERN.—This company has awarded contracts to the Bay City Foundry & Machine Company, Bay City, Mich., for the construction of 9 locomotive coaling stations. The new stations will be located at Burlington, Seattle, Everett, Columbia River, Wilson Creek, Harrington and Marcus, Washington, at Grand Forks, N. D., and Minneapolis, Minn.

IDAHO CENTRAL.—This company has applied to the Interstate Commerce Commission for a certificate of convenience and necessity in connection with the proposed construction of a line from Rogerson, Idaho, to Wells, Nev. The company holds that the building of the proposed line will open up extensive agricultural and mining territory now without railroad transportation. Officers further maintain that a new road will shorten the distance between points in Idaho, eastern Washington and Oregon, on the one hand, and Nevada and California on the other, by approximately 400 miles.

PALATINE, LAKE ZURICH & WAUCONDA.—This company has applied to the Interstate Commerce Commission for authority to cease operating and abandon its line from Palatine to Wauconda, Ill., because it has been unsuccessful in efforts to obtain funds to provide needed facilities.

SOUTHERN PACIFIC, TEXAS AND LOUISIANA LINES.—Bridge work amounting to approximately $700,000 has been authorized, also ballasting at various points, estimated to cost $3,800,000; new rails to be laid will involve an expenditure of $2,800,000.

Railway Financial News

ANN ARBOR.—The Interstate Commerce Commission has authorized this company to issue 12 notes for $5,190 each, maturing serially and bearing interest at 6 per cent, for the purpose of acquiring two eight-wheel switching locomotives from the American Locomotive Works at the price of $38,925 each, $15,570 to be covered by a cash payment.

On September 25 the Interstate Commerce Commission approved a loan of $250,000 to the Ann Arbor to aid this company in making additions and betterments to roadway and structures at a cost estimated at $500,000. The carrier itself is to finance $250,000 of the cost. The proposed additions and betterments include improvements of and additions to facilities at Toledo, Ohio, at a cost estimated at $400,000, which will enable the Pennsylvania to operate through the terminals of the Ann Arbor at that point to a connection with the Pere Marquette at Alexis, Ohio, making a through Detroit line.

ARKANSAS & LOUISIANA MISSOURI.—This company has applied to the Interstate Commerce Commission for a certificate authorizing it to operate the line from Monroe, La., to and through Bastrop, La., to Huttig, Ark., and, when rehabilitated, the line from Bastrop to Crossett, Ark.; also, for authority to issue $1,000,000 of capital stock for the payment of the purchase price and the necessary cost of rehabilitating the property acquired from the Arkansas & Louisiana Midland at a foreclosure sale.

BOSTON & MAINE.—Minority stockholders on September 23 waived their appeal in the Supreme Court at Springfield, Mass., against the action of the Public Utilities Commission in approving the issuance of $17,606,000 of six per cent bonds under the plan of reorganization, thus ending the threatened litigation.

BUFFALO, ROCHESTER & PITTSBURGH.—See Delaware, Lackawanna & Western.

CHICAGO & EASTERN ILLINOIS.—Judge Carpenter, in the Federal District Court at Chicago, has authorized the receiver to borrow $800,000 from the railroad revolving fund for 15 years at 6 per cent.

CHICAGO & NORTH WESTERN.—This company has applied to the Illinois Public Utilities Commission for authority to establish an Equipment Trust Agreement of 1920, providing for the issuance of equipment trust certificates to an amount aggregating $10,000,000. The company has also applied to the Commission for authority to issue and sell bonds under its "General Gold Bond Mortgage of 1987," and its "First and Refunding Gold Mortgage Bond," which provide for the refunding or retiring of underlying bonds in amounts of $440,000 and $416,000, respectively. The Commission has continued these applications without definite date.

DELAWARE, LACKAWANNA & WESTERN.—In an interview in Rochester on September 23, President William T. Noonan, of the Buffalo, Rochester & Pittsburgh, said that a working alliance between his road and the Delaware, Lackawanna & Western is being considered. "All this," he stated, "is in line with a closer working relationship which may give that line trackage facilities into Rochester, to the great benefit of that city. In turn, through the Buffalo, Rochester & Pittsburgh, the city would have another line by way of the Delaware, Lackawanna & Western to New York City, and all the territory tapped by that line would be directly accessible to traffic originating here and elsewhere on lines of the Buffalo, Rochester & Pittsburgh. Such a working relationship is, I believe, in line with the present-day conception of railroading. Operation of railroads under a close relationship during the war pointed the tendency. All this indicates the point the two lines are at in their plans for closer operation."

INDIANA HARBOR BELT.—This company has applied to the Interstate Commerce Commission for authority to issue demand notes to an amount not exceeding $2,200,000, to provide funds to pay current expenses, pending a settlement to be made with the United States government on the six months' guarantee. The company estimates that its guarantee will amount to $3,000,000.

KANSAS CITY, MEXICO & ORIENT.—This company has applied to the Interstate Commerce Commission for authority to issue $2,500,000 of 6 per cent receivers' certificates maturing December 1, 1921, to be used as collateral for a loan from the government.

MAINE CENTRAL.—The Interstate Commerce Commission on September 25, approved the making of a loan to this company of $653,000, to aid it in the purchase of 10 locomotives, 6 caboose cars and work equipment, at a total cost of $534,780, and in making additions and betterments at a total cost of $783,132. The applicant itself is required to finance $665,706 to meet the loan of the government.

This company has applied to the Interstate Commerce Commission for authority to issue $4,000,000 of 20-year first and refunding mortgage gold bonds at 6 per cent, dated December 1, 1915, to be pledged as collateral for loans.

PEARL RIVER VALLEY.—This company has applied to the Interstate Commerce Commission for authority to issue its unsecured notes for $150,000 to pay for additional construction.

PENNSYLVANIA.—Howard Heinz, of Pittsburgh, president of the H. J. Heinz Company, manufacturer of food products, and United States food administrator for Pennsylvania during the war, has been elected to the board of directors, succeeding Percival Roberts, who resigned last April.

PERE MARQUETTE.—This company has filed a claim with the Railroad Administration for $13,904,416 to adjust its accounts with the government for the period of federal control. This includes an item of $4,965,157 for under-maintenance and depreciation of equipment and $2,816,170 for maintenance of way and structures. There is also an item of $2,652,000 attributed to the inefficiency of labor.

ST. LOUIS & HANNIBAL.—This company has withdrawn its application, made to the Missouri Public Service Commission more than a year ago, for permission to cease operations and scrap its line. George A. Mahan, of Hannibal, counsel for the company, stated that the property had been sold to John Ringling, of circus fame, who proposes to improve the property and operate it. The line extends 103 miles, between Hannibal, Mo., and Perry.

TEXAS & PACIFIC.—This company has applied to the Interstate Commerce Commission for approval of an issue of $477,000 of notes for the purchase of 200 Rodger ballast cars.

VIRGINIAN.—The Interstate Commerce Commission on September 25 certified its approval of a loan of $2,000,000 to this company, to aid it in extending its facilities to adequately handle its rapidly increasing traffic. The carrier itself has financed large expenditures for equipment and other additions and betterments. The commission says that the Virginian is an important coal carrier and the transportation demands upon it are apparently limited only by the extent of its facilities and resources to meet them.

WESTERN MARYLAND.—The Interstate Commerce Commission on September 25 approved the making of a loan of $1,372,000 to the company, to aid it in purchasing 20 Mikado freight locomotives at a cost of $1,500,000, and in making additions and betterments to roadway and structures, at a cost of $822,800. The carrier itself is required to finance $750,000, one-half of the purchase price of the locomotives, and has itself already financed the purchase of two modern car floats at a cost of $500,000.

A BIG IMPROVEMENT in transportation conditions took place during the month of September, according to the Federal Reserve Bank of Philadelphia. It states that the improvement is by no means universal, but certainly the better movement of cars has been of great benefit to industries such as iron and steel, which had been greatly hampered heretofore.

Railway Officers

Executive

Floyd H. Milliard has been appointed assistant to the president of the St. Louis Southwestern on special assignments.

Eppa Hunton, Jr., general counsel of the Richmond, Fredericksburg & Potomac, has been elected president, with headquarters at Richmond, Va., succeeding **W. H. White,** deceased. Mr. Hunton was born on April 14, 1855, at Brentsville, Prince William County, Va. He studied in the grammar schools of Warrenton, Va., and attended the Bellevue High School in Bedford County, Va. Graduating in 1875, he entered the University of Virginia, from which he graduated in 1877. In the fall of the same year he began to practise law with his father at Warrenton, under the firm name of Hunton & Son. In 1901 he became a member of the law firm of Munford, Hunton, Williams & Anderson, at Richmond, Va., and still retains that connection. Besides representing the Richmond, Fredericksburg & Potomac, he is also counsel for the Washington-Southern.

E. Hunton, Jr.

Financial, Legal and Accounting

W. W. Smithey has been appointed auditor of the Houston & Brazos Valley with headquarters at Freeport, Tex., effective September 7, succeeding John R. Johnson, resigned.

Alfred Evens has been appointed general attorney of the Chicago, Indianapolis & Louisville with headquarters at Chicago, effective September 15.

M. E. Keehan, auditor of disbursements of the Chicago Great Western with headquarters at Chicago, has been appointed comptroller with the same headquarters, effective September 20; **W. H. Sievers** has been appointed to succeed Mr. Keehan, effective same date.

Operating

G. C. Vestal has been appointed chief despatcher of the Mobile & Ohio, with headquarters at Meridian, Miss.

G. H. Bateman has been appointed assistant trainmaster of the Illinois Central, with headquarters at Chicago, effective September 1.

D. S. Hartman, M. R. McCreath and J. C. Hamilton have been appointed trainmasters of the Illinois Central, with headquarters at Fordham, Ill., effective September 1.

J. B. Doles has been appointed chief despatcher on the Oregon Short line, with headquarters at Nampa, Idaho, effective September 20, succeeding **C. Fowler,** who has resigned.

H. G. McCarthy, assistant trainmaster on the Shasta division of the Southern Pacific, at Ashland, Ore., has been promoted to trainmaster of the Shasta division with the same headquarters, effective September 16 and the position of assistant trainmaster has been abolished.

C. S. Maharg, superintendent of the Cranbrook division of the Canadian Pacific, with headquarters at Cranbrook, B. C., has been transferred to the Vancouver division, with headquarters at Vancouver, B. C., succeeding **J. L. Jamieson,** who has been transferred to the Edmonton division, with headquarters at Edmonton, Alta., effective September 1. **W. S. Hall**, trainmaster on the Canadian Pacific, with headquarters at Red Deer, Alta., succeeds Mr. Maharg.

F. W. Smith, superintendent of telegraph and chief despatcher of the Bessemer & Lake Erie, has been promoted to assistant division superintendent, effective August 9. **R. V. Bagnall** succeeds Mr. Smith as chief despatcher and the title of superintendent of telegraph has been dropped, Mr. Smith still handling his former duties. **W. A. Skellie,** assistant trainmaster, with headquarters at Albion, Pa., has been promoted to trainmaster, with the same headquarters. **G. R. Steiger** succeeds Mr. Skellie.

Traffic

V. Schaffenburg has been appointed assistant general freight agent of the Texas & Pacific, with headquarters at New Orleans, La.

Charles J. Collins, general agent of the Chicago & North Western with headquarters at Cleveland, Ohio, has resigned, effective October 1.

W. E. Goodloe has been appointed division freight and passenger agent of the Pan Handle & Santa Fe, with headquarters at Amarillo, Tex.

W. S. Duryee has been appointed commercial agent of the Seaboard Air Line with headquarters at New York effective September 16, succeeding O. G. Boesser, resigned.

H. G. Sullivan has been appointed commercial agent of the Central of Georgia with headquarters at Athens, Ga., effective October 1, succeeding B. R. Bloodworth, resigned.

J. L. Cahoon, freight traffic representative of the Mobile & Ohio, has been appointed commercial agent with headquarters at Sheffield, Ala., succeeding J. G. Kitchell, promoted.

P. C. Patterson has been appointed general eastern agent of the Chicago, Indianapolis & Louisville with headquarters at New York, effective September 1, succeeding Cyril R. Boak, promoted.

J. Harmon Wilson has been appointed assistant general freight agent of the Norfolk & Western with headquarters at Columbus, Ohio, effective September 16, succeeding S. S. Bridgers, resigned.

T. B. Montgomery, general agent of the Northern Pacific with headquarters at New York, has been promoted to assistant freight traffic manager with headquarters at St. Paul, Minn., effective September 16.

Cyril R. Boak, general eastern agent of the Chicago, Indianapolis & Louisville, with headquarters at New York, has been appointed division freight agent, with headquarters at Chicago, effective September 1, succeeding **N. R. Markle,** resigned.

R. Chisholm, inspector of agencies of the Canadian National and Grand Trunk Pacific, with headquarters at Winnipeg, Man., has been given jurisdiction, effective September 1, over all Canadian National lines west of Armstrong, Ont., west of and including Port Arthur, Ont., to and including Edmonton, Alta. This territory will also include the Stony Plains, St. Albert, Athabaska and Onoway subdivisions, and all Grand Trunk Pacific lines east of and including Edmonton, Alta.

J. H. Wilson, foreign freight agent of the Norfolk & Western, with headquarters at New York and Norfolk, Va., has been appointed assistant general freight agent, with headquarters at Columbus, Ohio, succeeding **S. S. Bridgers,** who has resigned. **J. W. King** succeeds Mr. Wilson.

H. A. Benjamin, whose promotion to assistant general freight and passenger agent of the Waterloo, Cedar Falls & Northern, with headquarters at Waterloo, Iowa, was announced in the *Railway Age* of September 17 (page 507), was born on November 8, 1885, at Todago, Ind. He entered railroad service with the Toledo, St. Louis & Western on August 6, 1905, and served as agent and telegraph operator at various stations on that road. In December, 1909, when the Toledo, St. Louis & Western was consolidated temporarily with the Chicago & Alton, he was transferred to Chicago, where he served in the accounting department until March 1, 1911. Upon the latter date he was appointed agent and telegraph operator on the Southern division of the Chicago & Great Western. In June, 1915, he resigned to accept an appointment as commercial agent of the Waterloo, Cedar Falls & Northern, with headquarters at Waterloo, Iowa, the position he held at the time of his recent promotion.

Mechanical

E. H. McCann has been appointed master mechanic of the eastern division of the Chicago Great Western, with headquarters at Stockton, Ill., effective September 1.

Engineering, Maintenance of Way and Signaling

E. E. Mayo, roadmaster of the Southern Pacific at Hillsboro, Ore., has been promoted to division engineer of the Portland division, with headquarters at Portland, Ore., effective September 15. Mr. Mayo succeeds **H. M. Lull,** promoted.

J. B. Mabile, assistant engineer maintenance of way of the Chicago, Rock Island & Pacific, with headquarters at El Reno, Okla., has been appointed supervisor of work equipment, with headquarters at Chicago, effective September 16, succeeding A. L. Greenabaum, who has resigned.

C. D. Rex, signal supervisor of the Southern, Lines West, with headquarters at Oakdale, Tenn., has been appointed signal and electrical supervisor with headquarters at Cincinnati, Ohio, succeeding T. N. Charles, promoted; **B. Furman,** assistant signal supervisor with headquarters at Oakdale, Tenn., has been promoted to succeed Mr. Rex.

H. B. Holmes, who has been appointed chief engineer of the Pittsburgh & West Virginia and the West Side Belt, with headquarters at Pittsburgh, Pa., as noted in the *Railway Age* of September 10 (page 468), was born on July 13, 1875, at Ferris, Ill. He graduated from the State University of Iowa at Iowa City, Iowa. His first railroad work was done for the Chicago, Burlington & Quincy during the vacation periods of his college course, first as rodman and then as chainman and timekeeper. In 1900 he became rodman for the Kansas City, Mexico & Orient and remained with that company for eight years, advancing meanwhile to levelman, transitman, office engineer, engineer and assistant to the superintendent of construction. In 1913 he was appointed resident engineer at Kansas City, Mo., and in February, 1917, his title was changed to chief engineer, although his duties remained practically the same, that being the title given his position before the Kansas City, Mexico & Orient was put into receiver's hands. He resigned in September, 1917, to accept a position with the firm of Coverdale & Colpitts, of New York. He became principal assistant engineer in charge of the New York office of that firm in March, 1920, and retained that position until his recent appointment.

Special

J. M. Bannerman, chief special agent of the Canadian National, has been given jurisdiction over the lines of the Grand Trunk Pacific, in addition to his former duties, effective August 24. He will retain his headquarters at Winnipeg, Man.

Julius H. Parmelee, chief statistician of the Bureau of Railway Economics, with office at Washington, D. C., has been appointed director of the bureau. R. J. Leimer, heretofore assistant statistician, has been appointed statistician and J. E. Monroe has been appointed assistant sttistician.

Railroad Administration

George M. Huss, who resigned some months ago as chairman of the committee on claims of the Railroad Administration, has been appointed assistant to the director of liquidation claims, with office at Washington, D. C., effective on October 1.

Obituary

Jacob H. Schiff, head of the banking firm of Kuhn, Loeb & Co. of New York, since 1885, died on September 25 at his home in New York at the age of 73.

Richard L. O'Donnel, vice-president of the central region of the Pennsylvania with headquarters at Pittsburgh, Pa., died on September 28 at New York after an illness of several weeks. Mr. O'Donnel was born on November 5, 1860, at Philadelphia, Pa. He graduated from the Polytechnic College of Pennsylvania in 1882 and in 1883 entered the service of the Pennsylvania as rodman. From then until 1896, when he was appointed assistant engineer in the principal assistant engineer's office at Altoona, Pa., his promotions were frequent. In 1887 he was appointed assistant supervisor at Hollidaysburg, Pa., and in 1888 was transferred to Lancaster, Pa. For a short time afterward he served as assistant superintendent at New Florence, Pa., and in 1889 was appointed supervisor of the Altoona yard, retaining that position until 1891 when he was appointed assistant engineer of the Tyrone division. He was transferred to the Pittsburgh division in December, 1894, and in February, 1897, was appointed assistant superintendent of that division, being promoted to superintendent in 1902. He became general superintendent of the Buffalo & Allegheny Valley division in 1903 and in 1911 was transferred to the Western Pennsylvania division. He was promoted to assistant general manager of the lines east of Pittsburgh in 1917 and again promoted to general manager in 1918, serving in that capacity under Federal control. Mr. O'Donnel was elected vice-president in March, 1920. While acting for the American Railroad Association, in addition to his other duties, he was placed in charge of the movements of troops to the Mexican Border in 1916 and in the early part of 1917 was assigned to Governor's Island where he had entire charge of the embarkment of all troops and supplies. In this connection he worked in conjunction with the War Department.

R. L. O'Donnel

STRIKE ENDING.—The strike as a mode of solving labor problems is deprecated by all the judicious. In the course of time it must wholly be abolished. To strike is to wage war, and there is need for perpetual peace in the industrial world. Without it there can be no continued prosperity, nor comfort, nor content. It rejoices our soul, therefore, to find a labor organization which has renounced the stone-age method of enforcing its demands. All honor is due to the Order of Railroad Station Agents of Pittsburgh, which has eliminated its by-laws authorizing strikes and voted to submit grievances hereafter to the Railroad Labor Board and abide by its decision. This is a small straw and the breeze whose direction it indicates is not very strong, but we hope it will wax to a big wind.—*Leslie's.*